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Textile World

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"We Aren't Selling Mah Jong Sets"

IF YOU have a mah jong set around the house which you'd like to dispose of for cash, it's just too bad. You can't get "cost plus a fair profit"; we doubt if you can give it away.

But, as we understand it, most of our readers are interested in selling textiles.

And textiles aren't mah jong sets.

Why, then, do so many textile manufacturers act as if they were selling mah jong sets?

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We do not belong to any particular "school" of economics. Consequently we are not prepared to cite a great fundamental law which demands two different types of merchandising psychology for these two admittedly different products.

However, it is our impression that a seller can learn a lot about his market if he can secure the correct answers to the following two questions:

1. Do his "prospects" want what he has to sell?
2. Is he offering his product at a fair price?

In the case of mah jong sets, the answer to the first question makes it unnecessary to proceed to the second. No one wants them; consequently the cost of bamboo, the prevailing market levels for ivory, and the status of wages in China are purely academic questions in so far as this particular product is concerned.

But textiles aren't mah jong sets.

Take cotton goods for example:

Answering the first question, somebody apparently wants cotton goods. Thus far this year, the industry has sold slightly more than it has produced. Actual shipments were approximately 4% in excess of output.

On the question of price, inflation seems to be conspicuously absent. At the risk of falling into the tipster class, we hazard the opinion that current raw cotton levels are attractive, to put it mildly. From our knowledge of manufacturing costs, we hazard the further opinion that if the *top* prices in the present market for cotton goods were investigated by all the sub-committees of the Senate, even the tabloids could not find use for the heading: "Profiteering Among Textile Barons."

Against these facts, there is nothing but an illusion; an apparent belief that buyers don't want cotton goods any more than an American home wants a mah jong set, and that there is a concerted refusal to pay current prices for textiles, whether fair or not.

So long as this illusion persists, of course, it is necessary to employ mah jong merchandising methods. Cotton goods must be unloaded at any price, irrespective of raw material values, production costs, wage levels, and profit margins.

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This is the slogan season. The keynote for 1931 will be variously interpreted as "We Believe in America," "Bigger and Better Business," "Prosperity for Ever."

As a textile slogan we suggest: "We Aren't Selling Mah Jong Sets."

The Week in Textiles

What of Rayon Conference? . . .

WITH SOME rayon producers on their way home and others expected to sail shortly, the American rayon industry remains hopeful but uninformed regarding what took place at the reported international conclave of rayon producers in London. Details being unavailable, the industry is in a waiting mood, expecting that some statement on the moot question of rayon market stabilization may be forthcoming when the producers arrive in New York. . . . . Uncertainty on the score of 1931 prices has put a damper on future coverage, and current turnover is limited to immediate needs. The tone of the market is optimistic, however; it is felt that the actual recognition of the instability problem which the London meeting implies, marks an important step forward.

Old Habits Return . . .

A FEW COTTON goods sellers have contracted a case of cold feet and the result has been unfortunate to the market. . . . . One of two large sellers seeing little business coming their way decided to reach for it. They reached by cutting prices of fabrics that had been the most active, secured some business for early 1931 but at same time forced other houses to lower their ideas. . . . . Result—market level dropped another $\frac{1}{8}$c. and business is now less active than it was before.

Alexandria Curbs Short Selling . . .

IN AN EFFORT to curb the wave of short selling which has had a demoralizing effect upon futures trading on the Alexandria exchange recently, the Egyptian government, Wednesday of this week, decided to exclude from trading on futures exchange, for a period of two weeks, all speculators and small jobbers, and to require legitimate sellers to deposit a margin of 4 Egyptian dollars for each 100 lb. of Sakel futures they wish to sell, and $2\frac{1}{2}$ Egyptian dollars for each 100 lb. of Uppers. . . . . On strength of Government's decision, Alexandria market advanced approximately 80 points on short covering of Sakel Wednesday and about 30 points on Upper futures.

The Life of a Sailor . . .

TEXTILE MANUFACTURERS will have to change specifications when making cloth to go into uniforms for the Navy if Capt. Charles S. Freeman, commanding the battleship "Arizona," has his way. . . . . The captain says that the present outfit of the gobs is as out of date as "pigtails and ear-rings." His recommendations include belted fly-front trousers, flannel shirts, coats and close fitting caps; while possible colors would be gray, mouse, forest green, olive drab, slate or horizon blue.

Nearing Goal on Night Work . . .

WITH EXECUTIVES representing 21,810,453 spindles committed to the proposal to discontinue night employment of women and minors in cotton mills, the goal of 75% of the industry is within hailing distance.

Favor Aid for Massachusetts Textiles . . .

THREE SPECIFIC recommendations to the State Legislature as a means of aiding the cotton mills of the State are contained in the report of the Massachusetts Industrial Commission. The Commission urges: that the Legislature pass no new laws which would burden the textile industry until other State laws attain the standards of Massachusetts; that in revising the tax laws effort should be made to reduce the burden on manufacturing industries and that a just basis for evaluating textile mill properties should be established in which earning power will exert due influence; and that the Legislature take such action as would be con-

The Textile Outlook

FORCING the market in a period which is normally quiet has weakened prices in cotton goods and cast something of a shadow upon the immediate future. Raw cotton touched new lows, partly because of weakness in the goods market. Mill men have been in the habit of following cotton; now they seem to be leading it and consequently responsibility for their market is more than ever before squarely on their own shoulders. After brief activity goods buyers have retired from the market and it now remains for the conservative members of the trade to work overtime in rebuilding damaged confidence. . . . In wool goods circles retail distribution is better and mill men hope good clearances will encourage covering for spring which improve the tone of the wholesale market. . . . Raw silk advanced and the general market tone was better. Knit goods are dull and the outlook clouded.

The Business Outlook

WEEK by week business bumps along the rocky bottom of the valley looking forward grimly to the new year, expecting nothing more of this one, and getting it. The last months of depression are the toughest. The general level of activity still fluctuates around the deadline, dipping again in the week ended Dec. 6 from 80.3% of normal to 77.1%. Basic industrial production continues to decline, along with freight movement, while retail trade rises, all according to calendar, but hardly according to requirements of a merry Christmas. . . . Salvage crews are working hard to prop up or clear away some of the financial wreckage left by the tidal wave of deflation. The wave has not altogether subsided. Commodity prices not moored to government funds have been washed down a bit farther. Despite the most liquid banking position in a decade, the deadly construction of credit continues.—*The Business Week.*

ducive of standardization of labor laws in all States, particularly the 48-hour law. . . . . In dealing with the woolen and worsted industry the report states that other States have been making gains at the expense of Massachusetts. The industry is said to be in fairly good condition, but suffering from labor laws and burdensome taxation. Half the mills of the State have jumped productive capacity since 1925, the report discloses, through installation of new machinery and it also reveals that those who have modernized their plants are doing the best business.

On With the Vestal Bill! . . .

WITH HEARINGS assigned for Dec. 16, prompt action by the Senate Committee on Patents may bring the Vestal bill for copyright registration of designs to a vote in the upper house this session. Designed to suppress piracy of designs particularly flagrant in the textile field, the Vestal bill passed the House by a viva voce vote July 2. . . . . Representative Vestal, chairman of the House Committee, declares that the measure has merit entitling it to the same favorable consideration in the Senate.

Wool Growers Optimistic . . .

ALTHOUGH THE sheep business has shouldered its share of the current depression, the dark clouds are not without their silver lining, according to the statement of Frank J. Hagenbarth, veteran president of the national association at the 66th annual convention of the National Wool Growers Association at Colorado Springs, Dec. 10 to 12. . . . . Mr. Hagenbarth, who has piloted the association through many lean periods, said "The sheep business is alive today, on a sound basis and able to weather the storm because of the protective tariff, the National Wool Marketing Corp. and other results of the work done by American wool growers since 1865 through their national association."

No Gains in Finishing . . .

NOVEMBER SHOWED no appreciable gain in the finishing industry as compared with October, according to the figures of the National Association of Finishers of Cotton Fabrics. . . . . The figures in percentage of normal average capacity for different processes are as follows, the November figure being given first: white and dyed, 46, 51; fast black, 20, 22; logwood black, 43, 41; prints, 55, 55.

Egyptian Cotton Crop . . .

ACCORDING TO U. S. Department of Agriculture, Egyptian cotton crop for 1930-31 is now estimated to be 1,697,000 bales of 478 lb., 46,000 bales or 2.6% below October estimate, and 28,000 bales or 1.6% below final estimated production for previous season.

Further Hosiery Curtailment . . .

FULL-FASHIONED HOSIERY producers in the New Jersey and Pennsylvania districts and in the South, are making further effort to solve the overproduction problem, it is indicated. Wednesday brought reports of a widespread tendency toward reduced output in the South, with some small mills already shut down for the holiday period. Numerous New Jersey and Pennsylvania units plan Dec. 20 to Jan. 5 shutdowns. . . . . Most of these units have only small production; in some cases the shutdowns are normal for Christmas. According to the industry's leaders, the curtailment will have to be considerably more extensive to be really effective. However, the trend is in the right direction and is encouraging hopes for a healthier situation in the spring.

Brains and Energy Being Applied to Textiles

Says Jay R. Monroe

"For some time it has been most interesting to watch the progress of the textile industry; lately, it has aroused the keenest approval of close observers," states Jay R. Monroe, president, Monroe Calculating Machine Co., Inc., Orange, N. J. "The first essential step for any industry which has been weathering a depression is to get all the facts about its own condition. Determination of costs is all-important, and textile men have been working intelligently at that. Having those data they know where they stand and can proceed to another essential step, the modernization of their plants and equipment. This they are also doing. When brains and energy have been applied to any industry as they are being applied to textiles, the future is bright. Observers are now seeing the textile industry taking again its rightful position among the leaders of the American business world."

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Finds 11% Regain for Rayon . . . .

THE CHAMBER OF COMMERCE of Berlin, Germany, expresses the opinion that 11% is the normal regain for viscose and cuprammonium rayons and that a tolerance of 4 to 5% should be allowed in the true weight of skeins. . . . . The chamber believes that this regain applies also to natural silk, but not to acetate yarn.

YARN MERCHANDISING—TO

Coordinating Yarn Manufacturing and Selling Functions

Second Article in a Series

ALTHOUGH addressed to the retail merchant, a remark made by R. H. DuBois, of the Sherman Corp., has been pointed out as having application to the field of yarn distribution. In speaking of merchandising to meet 1930 conditions Mr. DuBois said: "The average retail merchant is too intensively interested in *wanting* sales and not sufficiently interested in building an organization that can produce these sales. A successful merchant doesn't build a business—he builds an organization and the organization builds the business."

When the subject of yarn mills establishing closer contact with their selling house and customers is first broached, the mill men complain that the selling house will not allow them any contact with customers. Selling houses, in turn, will usually state that the less the mill man sees of customers the better it is for all concerned. Incidents will be cited where the mill man was taken to see a customer and proceeded to say the wrong thing at the wrong time and, in general, spoiled a great deal of the work which the salesman had been doing. Some of the best stories in the yarn market concern the mill man "putting his foot in it" when taken to see a customer.

Mill men say that the selling house won't allow them to contact customers because they are jealous and afraid that the mill man will learn too much, while the selling houses say that the mill man is a hindrance rather than a help. Since the initiative in correcting conditions must come from the spinner, it would appear that the mill man would benefit by placing his dealings on a basis where the selling house would not be suspicious of being dropped from the picture when the mill man had established contact with the customers, and by knowing enough about sales problems so that he would actually be a help to the salesman in making a call.

No one believes that the situation would be helped by having mill men suddenly rush out and begin calling on customers. However, there is a desire on the part of mill men themselves, selling houses, and customers, that the mill man give sufficient thought to selling so that he may accomplish the following:

1. Make the correct arrangements for the marketing of the product.
2. Place the arrangements on a permanent basis.
3. Recognize the importance of giving attention to the state of the market in planning production.

Study of Selling Connections

The stories of friction which are heard about the market indicate that many spinners have not made the correct selling arrangements, evidently because they have not given the subject sufficient thought. Marketing procedure in other industries emphasizes the importance of first determining the market for the product, then selecting those in the market who would make worthwhile customers, and finally choosing the type of sales organization which will best reach this list.

An outside student of merchandising, who has had considerable contact with the yarn trade, says: "Naturally there are considerations, financial and otherwise, which a mill takes into account when determining whether to sell through broker, dealer, or direct, but I find, in most instances, that, even after such determination has been made, the selection of a particular broker, dealer, or direct salesman, has not been subjected to the proper analysis from the viewpoint of the particular market which it is desired to reach."

Some mills believe it to their advantage to utilize all three methods of selling. More believe that they should sell through all brokers, or all dealers, stating that they sell *to* rather than *through* the dealer. In view of the fact that the dealers do not carry the large stocks and perform the jobbing function as extensively as they did and that most of them will say that they look upon themselves more as brokers, selling yarn for the mill rather than buying it, the attitude that the spinner sells *to* the dealer would appear to be incorrect. The factoring function, advancing money in ten days and assuming responsibility for debts, has come to be looked upon as something outside the selling function.

Problems Faced by the Mill

These changes call for greater attention to sales on the part of the yarn mill, that is, attention to placing the product in the hands of the ultimate consumer. Mills face a difficult problem in seeing that their yarn is properly merchandised. Something of what many do face is contained in the following statement of a large dealer:

"Frankly, we don't make much effort to talk quality when we quote on yarn from the ——— Mills. This mill sells through any, and all, channels and we have the feeling that it wouldn't do us any good to spend time building up its reputation, because tomorrow, some other dealer, or broker, or the mill itself for that matter, will dash in and sell the customer and we will not have received one bit of return for our efforts."

Then there are the brokers. One rather sheepishly admits: "When I sell yarn for the X Mill all I think about is the 2% and I don't give a hang whether the mill makes money or not. This isn't a very high-minded attitude, but what can I do? Should I go out to a customer and fight for a certain price when I know that another broker, who is also working on the customer

REPLACE YARN PEDDLING

with X's yarn, will not stand on price, but will try and secure an offer and then wire the mill? To tell the truth, I really work more for the customer than for such a mill, and every other broker does the same."

As far as direct sellers are concerned there are stories of So-and-so who isn't working very hard because he suspects that he was taken on so the mill would get in touch with his trade, and that he will be dropped as soon as this is accomplished.

Naturally, the mills are not all black and the dealers, brokers and direct salesmen all white. Some blame can be attached to all parties, but, as stated before, correction must come from the mills.

Permanent Connections Indicated

In considering the making of correct selling arrangements, on the part of mills, the consensus of opinion is that proper merchandising is difficult unless the account is confined. It is believed that the mill will have difficulty in building up its reputation, and profits, unless there is some certain selling house which will concentrate on that mill and work out a cooperative program.

Any argument in favor of confined accounts is also an argument in favor of placing the arrangements on a permanent basis. Lack of any feeling of permanency is a serious handicap to the broker, dealer, or direct salesman, in the development of a real merchandising policy.

One case has been used as an example of correct mill procedure. A yarn man tells the story:

"This mill was making an average grade of 30/2 and selling any way it could. Naturally most was sold on a price basis and the management became a little weary of the game. The personnel of the mill was of the careful, painstaking type, suited to turn out a better than average yarn, so it was decided to make a high grade 30/2. The problem arose how to let the trade know that this was a quality, and not a price, yarn; in other words how to advertise.

"The mill was too small to make direct selling sound. The mill itself couldn't receive much benefit from advertising—and I am speaking of advertising in its broadest sense—because most of the yarn reached the ultimate consumer without the mill's name being known. Dealers said, 'why should we talk up your mill when someone else may reap the benefit?' To make a long story short, after a careful survey one dealer was chosen and a connection made. The dealer's salesmen boosted the mill, the connection was advertised to the mill's buyers, there was mutual assistance and things worked out well.

"I believe that the most important point in the story is this: The dealer found that the mill had made a real study of selling and had picked him only after being convinced that he offered the best possible agency. With the mill convinced that it was making the best move, the dealer knew that the connection would be permanent, that the mill understood enough of selling problems not to expect miracles, that there would be fair play, and that the account would prove an asset. With more connections made on such a firm foundation I think that we would have better merchandising."

A number of yarn mills have fluctuating sales policies. The reasons must lie in two directions: First, the mill has not thought out the problem sufficiently to be sure that the proper arrangements have been made; second, the mill does not understand marketing sufficiently to comprehend what the selling house is up against. Under such circumstances the other field always looks greener.

Where mill management understands marketing it does not follow that the selling house will be interfered with constantly. Usually the opposite is the case, for the mill man then realizes that the selling house is an expert in marketing, just as the superintendent is an expert on production.

A recent episode illustrates the attitude of the mill man who knows enough about selling to realize that the selling house is the expert on markets. The mill owner called on a friend and, in the course of the conversation, it developed that the friend wished to buy some yarn. Whereupon the owner, knowing the selling house was in closer touch with the market than he was, wired the selling house asking what price he should quote.

Many observers have pointed out the serious consequences of lack of market knowledge on the part of yarn mills. From the production standpoint it is desirable to run uniformly, but from a market angle such a procedure is often disastrous. For example, a mill continues to run full, after orders drop off, so that overhead may be saved. Market conditions may be such that the accumulation will have to be dumped eventually at a price which will give away far more than was saved in overhead.

There are also times when it is advisable to run stock, but in either case an accurate knowledge of the market is essential, and such knowledge can best be obtained by keeping close watch on the consuming trade through the selling house. With information on market conditions from the selling house and data from the superintendent, the mill man is in a position to make a real executive decision by balancing the two.

The manager of one large spinning mill, which sells direct, is outspoken in commenting on the lack of sales sense in some managers. He says: "It is criminal for a mill manager to accept orders at a loss without consulting at least with the directors, and stockholders should be reached where possible. Outside of the ethics involved in playing with someone else's money, this might curb some who think that the mill has to run full—no matter at what price—so it will appear that they are earning their salary."

Boiled down opinion emphasizes the fact that mills should give the problems of sales sufficient study to make the correct selling arrangements, stick to the arrangements, and realize that marketing problems are of vital concern to them.

Full-Fashioned Hosiery on One
Still the Inventor's Goal

By M. C. Miller, M. E.,

Mechanical Engineer, Manville, R. I.

AS is well known to those skilled in the art, there are two machines used in knitting full-fashioned hosiery fabrics, one for the leg and one for the foot, and known respectively as legger and footer. They closely resemble each other; but certain of their mechanisms, while of the same construction in both machines, produce differently shaped fabrics. This is particularly true of the shaping implements and yarn feeders.

The leg fabric of full-fashioned hosiery, as it is removed from the legger, is shaped as shown in Fig. 1. It consists of the welt portion 1, the top leg narrowing 2, the calf narrowing 3, the ankle or instep 4, the high splice 5, the heel flaps 6, the instep ravel 7, and the heel ravel 8.

Knitting Leg and Foot

The process of knitting commences at the welt end, which, through welt turning, is made a double fabric, as shown at 1. Thereafter the machine is caused to narrow at 2, followed by top leg knitting. The machine is again caused to narrow at 3, following with knitting of the ankle fabric width 4. When the proper length of ankle has been knitted, the reinforcing or high splicing thread is added as shown as 5 until knitting has progressed to line *a*. After this the ravel portion 7 is knitted, and at the same time the heel flaps 6 are formed. After the short ravel portion 7 is knitted, the yarn which knitted this portion is put out of action, in this manner—during the next course of knitting—casting the ravel fabric off the needles. The result is that the needles that have been knitting this portion of the stocking no longer produce loops, while the needles forming the heel flaps continue to knit. Narrowing takes place thereafter at 6', followed by a loose course and the knitting of the heel ravels 8. Thereafter these heel fabrics are cast off the needles. The operator then causes the machine to repeat the process just described for the new leg fabrics.

These leg fabrics are then prepared for transfer to the footing machine. The first part of this process consists in slightly enlarging a wale of loops on the inner side of each of the heel flaps, as shown at 9, Fig. 1. These enlarged loops are one or two wales removed from the edges. This enlarging operation is called boning, and is usually performed by a girl rubbing a bone or similar implement along the fabric wale, thereby somewhat enlarging the loops of this wale. Some machines knit these special loops during the process of producing the heel flaps. The object is to permit this or another operator to impale these loops on a series of pointed needles so that the fabric then resembles that shown in Fig. 2. The ravel loops 7 are then raveled, so that only the instep line of these loops remains on the needles. This ravel fabric assists the operator in impaling the loops with the needles.

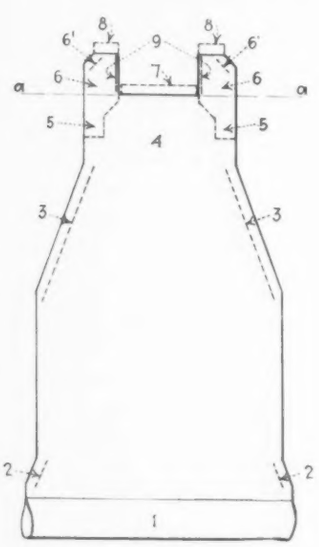


Fig. 1. Leg of full-fashioned stocking.

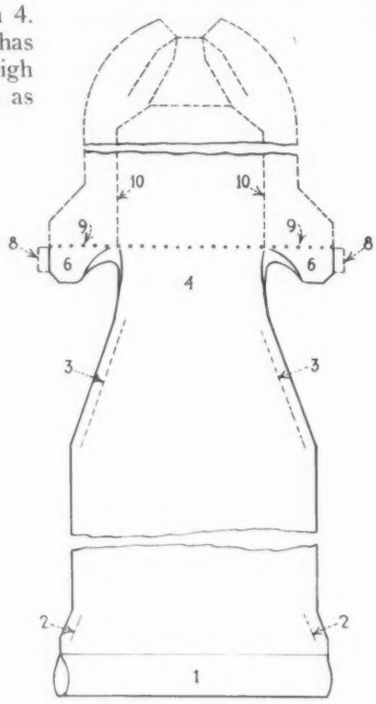


Fig. 2. Heel flaps transferred.

This bar of needles with the loops impaled on them is then placed in a special machine containing a bar fitted with a series of points, equal in number to the needles. The loops are here transferred from the needles to the points. This operation is known as bar topping.

These point bars are then inserted in holders provided for them on the footing machine, to the needles of which the loops are then transferred, usually by topper girls assisted by the footing machine operator. Thereafter the operator causes the machine to knit the feet of the stockings, the outline being somewhat as shown by dotted lines, in Fig. 2.

This two-machine method of producing full-fashioned stockings does not of course

Machine

Recent attempts to popularize full-fashioned hosiery knitted on one machine have again aroused speculation as to the likelihood of a unit machine being developed capable of making a thoroughly satisfactory product. None has apparently been developed to date, in spite of the fact that the possibility has occupied the minds of inventors for many years. Because of the present interest in the subject, we have asked Mr. Miller to write a series of articles, apart from his regular series on full-fashioned hosiery machines and their operation, outlining what has been done in this direction and what opportunities exist for further development. The first of these articles appears herewith.

lend itself to high speed production. It has many disadvantages other than the cost, although the cost is an important factor, particularly in fine-gauge hosiery, which is what we are mainly discussing here.

A very serious objection to the two-machine method is that the yarn with which the 4 fabric, Fig. 1, is knitted is not the same yarn that is used to knit the continuing portion of this part of the stocking in the foot. While, if cotton is being knitted, an unnoticeable juncture results at the line *a*, Fig. 1, this juncture is usually noticeable when knitting silk, even if both the footer and the legger

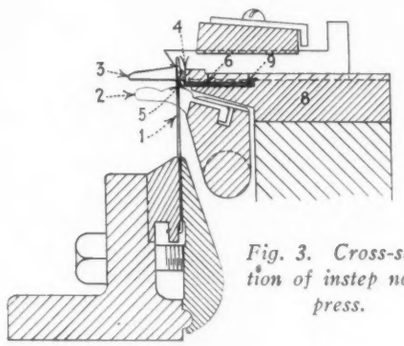


Fig. 3. Cross-section of instep non-press.

are very carefully adjusted and are producing—as near as it is possible—the same size and type of loops. The reason for this is that the thickness of silk is quite variable in itself, particularly when taken from two separate yarn packages or cones, and this variation is aggravated if the particular cones were wound from different lots of silk. Even if care is exercised to wind cones from the same lot of silk for the footing as for the legging, some yarn-thickness variation is quite probable. Even if no variation in yarn thickness exists, the tension in running the yarn from the different cones varies considerably, particularly with respect to full cones as compared with partially emptied cones. Other factors affecting the appearance of the fabric are moisture content or temperature of the yarn, and even the slightest variation in the running of the yarn over the yarn tension devices, with which both the footer and the legger must be equipped. When all of these factors are taken into consideration, it can readily be seen that it is a very difficult matter to produce two-machine hosiery in which fabric variation is not noticeable at the line *a*, Fig. 2.

Solutions Attempted

A solution to this fabric-variation difficulty was attempted many years ago in the production of what are known as English feet, in which the instep fabric is a continuation in the foot of the fabric 4 shown in Fig. 1, the footing machine knitting only the sole and toe portions of the foot. A very serious objection to this type of foot is the necessary later seaming 10, Fig. 2. It is mainly for this reason that the English footed stocking is not in use to any great extent for plain stockings and is used practically exclusively for design stockings. Therefore in this article we will not concern ourselves with this type.

One of a number of methods devised to overcome the two-machine system was the following: Knitting was conducted as described previously up to the line *a*, Fig. 1.

The fabric 7 was held on its needles so that it would not be cast off. Knitting of the heel flaps was continued as in ordinary practice. The heel flaps were then cast off while the fabric 7 was still held on the needles. The edge loops 9, Fig. 1, were transferred directly to the needles, so that the position of the fabric on the needles somewhat resembled that shown in Fig. 2. The foot fabric was then knitted in the normal manner.

This method requires that a different needle-pressing mechanism be fitted to the machine so that the needles holding idle the instep fabric may continue to move up and down as though they were knitting, without, however, casting off their loops. This non-pressing is of course necessary throughout the period of time that the heel flaps 6 are being knitted.

Karl Nabel Patent

A great number of mechanisms have been evolved to accomplish this purpose. An early construction, although I do not believe it was the first one, is shown in a patent obtained by Karl Nabel. This particular construction is shown in Figs. 3 and 4, in which 1 represents the needles; 2, the knockover bits; and 3, the sinkers. In this drawing, the needles, in so far as their up-and-down movement is concerned, are shown at the position they would normally be in while pressing. Because the instep needles, at the time they reach the knitting line *a*, Fig. 1, are not to press, there is provided on the regular camshaft of the machine a special press cam, to which the needle-pressing operating mechanism is shifted. This places the needles

in the position shown in Fig. 3, so that they will not contact with the normal pressing edge 4.

If no other means were provided, all the needle beards would therefore remain open and no press or cast-off action would take place. While this is what is desired for the needles knitting the 7 or instep fabric, the heel-flap needles must press at every course. Therefore there is provided a special pressing surface 5, which extends over the width of the heel-flap needles and is formed as part of a bar 6. The bars 6 are as long as a needle section and have the up-turned ends 5 at each end, with a cutaway central portion 7 (Fig. 4) as wide as the instep portion. The bars 6 are carried by a groove under the sinkers, formed into the lower sinker bed 8, and are free to move in and out slightly. In their inner or idle position, their surfaces 5 are in line with the normal press edge 4; so that, when they are in this inner position, a normal straight pressing edge is presented, against which all of the needles can be pressed.

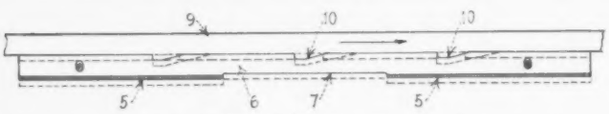


Fig. 4. Plan of instep non-press bar.

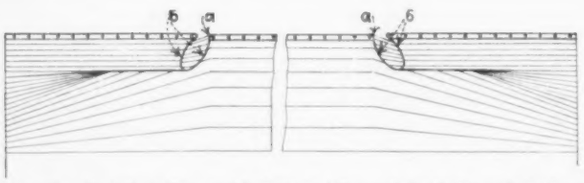


Fig. 5. Fabric effect with instep idle and heel flaps knitting.

In the same groove with these bars 6, and contacting with their inner edge, there is provided a bar 9, which extends throughout the machine length and is fitted with the cam surfaces 10 (Fig. 4). When the bar 9 is pulled in the direction of the arrow (Fig. 4), the cams 10 move the bars 6 at each section outwardly, and in this manner present their pressing surfaces 5 to the needles. The heel-flap needles will therefore be pressed, even though the needles do not move as far as they do when normal pressing takes place. Due to the cutaway place 7, the instep needles will not be pressed. The bar 6 will remain in this position, with the sub-normal pressing cam of the machine in action, during the entire time the heel flaps are being knitted.

Objections to Method

There are of course many constructions that might be used to attain these same ends, and many constructions have been used; but they are all objectionable due to the fact that the instep-fabric needles are moving up and down in the last course of the instep. While the loops are not being cast off, this continual sliding of the instep needles in them during the entire time required to knit the heel flaps, is not at all desirable. It has a tendency to injure the last course of the instep fabric, and this course will appear in a very noticeable portion of the fabric when the stocking is being worn.

Another detriment is that these instep needles draw their loops during all of this idling period over the knock-over bits. This action is again very likely to enlarge or otherwise injure the last instep course of loops. It is also far more difficult to transfer loops directly to the needles than it is to transfer them in the normal footing-transfer method. Another serious objection to this method is that the rather costly full-fashioned legging machine is not producing fabric during the time the operator is transferring the loops 9 to the needles; and it must be borne in mind that full-fashioned machines are composed of multiple sections and that therefore the operator must transfer a great number of heel-flap fabrics to the needles before he can commence knitting the foot.

Still another and extremely serious objection to this method is that the instep needles, due to holding the instep fabric idle during the entire time required to knit the heel flaps, prevent the normal fabric take-up means from acting to draw the heel-flap fabrics away from the needles as they are being knitted. As it is not practical to produce fabric on a full-fashioned machine without the use of some form of drawing or fabric-take-up means, it is necessary with this system to attach to each heel-flap fabric a supplementary fabric-take-up means. While it would appear at first thought as though this would be readily possible, it is this difficulty of tensioning heel-flap fabrics that has proved the stumbling block to the perfection of many of the machines and devices devised to knit the foot and leg on one machine. The solution is particularly difficult with this method.

Heel-Flap Tension

The most obvious manner in which to acquire this fabric heel-flap tension would be to attach a small hook and weighted cord to each heel flap. This would solve the problem if the hook could be devised small enough so as not to interfere with the sinkers and knock-over bits. It would also be necessary that the knitter, every few courses, reattach the hooks to the new fabric as it is formed, because new fabric is continually being knitted by the heel-flap needles, while the old fabric remains on the instep needles. This new fabric must continually be tensioned at a point close to the needles; otherwise the tension will very shortly act only on the end needles of the instep series and will not affect the needles immediately adjoining such needles, as shown in Fig. 5, even though the outer needles of the heel series would possibly be affected enough to tension this portion of the fabrics.

It has been suggested that a take-up wire be inserted to affect only the heel fabric. This is not practical, for in the first few courses of the heel fabric a wire could not well be inserted without enlarging the loops at the *a* points of the instep fabric (Fig. 5). Furthermore, such wires would have to be very small in diameter, as they would be obliged to pass between the upper surfaces of the knockover bits and the under sides of the sinkers. The real difficulty in devising a fabric-take-up means is of course the fact that the heel needles 6, immediately adjoining the *a* needles (Fig. 5), are really forming selvage fabric and any tension placed on this heel fabric will enlarge or at least distort the outer loops of the instep fabric. A take-up rod placed into the loops of fabric being formed at 6 (Fig. 5), while it would tension the newly formed fabric at this portion, would not act on the outer edge of the fabric, as no loop of fabric is being formed at this portion; it is only the fabric connection formed at *a* that causes a fabric loop to be formed, and such a loop is not formed for the entire width of the heel-flap fabric, all as shown in Fig. 5. Furthermore, there is very little space between the top of the knock-over bits and the underside of the sinkers for any type of fabric-take-up connections.

(*To be continued in a later issue.*)

Andrew G. Pierce, Jr., chairman of board of directors

Lionel J. Noah, new president of American Woolen Co.

William B. Warner, chairman of executive committee

Albert H. Wiggin, member of executive committee

Moses Pendleton, vice-president and general manager

Charles Hayden, member of executive committee

New Officers for American Woolen Co.

LIONEL J. NOAH, present executive vice-president of Gimbel Bros., Philadelphia, will become president of the American Woolen Co., effective Feb. 2, and William B. Warner, president of the McCall Corp., New York, will be the new chairman of the executive committee, according to an announcement made Dec. 5 by President Andrew G. Pierce. Mr. Pierce, retiring as president, will become chairman of board of directors.

Further changes include the promotion of Moses Pendleton to the office of first vice-president, in addition to which he will continue his present duties as general manager of the corporation. The new executive committee is made up of Albert J. Wiggin, chairman of the Chase National Bank, New York.; Charles Hayden, of Hayden, Stone & Co.; Ray Morris, of Brown Bros. & Co.; and Messrs. Noah, Warner and Pendleton.

Comment in the industry is favorable to the new executives and the consensus of opinion is that the company will have the most effective line-up that it has enjoyed in many years. Moses Pendleton has been with the company almost since its beginning and is well regarded for his skill in purchasing raw wool and supervising manufacturing, while Messrs. Noah and Warner bring to the company years of experience as specialists in merchandising. It is apparent from the choice of the new officers that the company regards the problems of distribution as of paramount importance and has faith

(Continued on page 83)

Answers to—

What IS the Rubenstein Patent?

Who Controls It, and Why?

By Edwin D. Fowle

Associate Editor, TEXTILE WORLD

LIKE a seaplane suddenly dropping from the sky into a quiet harbor, the Rubenstein patent has landed on and somewhat ruffled up the ordinarily smooth waters of the rayon circular-underwear business. Run-resistant circular underwear fabric has been the dream of many a student of knitting mechanism. To a certain extent the Rubenstein patent achieves the long-desired result.

Rubenstein fabric will run, but with nowhere near the readiness of ordinary circular-knit fabric. A considerable strain is required to start a run, and the tension must be maintained to keep it moving. The fabric is filling-knitted—not warp-knitted—and its peculiar property is due to a certain difference in construction between consecutive courses.

Control of the Patent

The control of the patent has been arranged to make the invention available at low cost to knitting mills, to encourage its use, and so to enhance the consumer's respect for circular-knitted rayon underwear. These are worthy motives, from the standpoint of manufacturers of rayon underwear, and the success of plans laid out by the rayon producers who control the patent—the Viscose Co., Du Pont Rayon Co., and Tubize Chatillon Corp.—will be watched with sympathy by farseeing manufacturers.

A fee of $\frac{1}{4}$c. per pound is charged for the use of the invention. In view of the fact that a substantial sum was paid for the patent by the present owners and that there is considerable promotional and clerical work involved in encouraging and licensing its use, this charge seems extremely reasonable. The breadth of purpose and openness of motive behind this development are indicated by the fact that license holders are free to use in their Rubenstein fabrics other rayon than that manufactured by the three companies concerned. In fact, should a silk knitter wish to obtain a license, he may do so. It is stated that, to prevent an unfair advantage being gained by mills which wait until the market has been developed before applying for a license, the owners plan to raise the fee after the first of the year or to require an adjustment equalizing the opportunities of late-comers with those who have taken out a license earlier.

At the present time there are no restrictions on the quality of the fabric to be manufactured under the license; but such restrictions will be announced in a very short time, with an allowance of 90 days before they take effect. The specifications will require the fabric simply to equal or exceed a certain weight per yard. This policy will prevent any setback to the popularizing of Rubenstein garments caused by the production of unsatisfactory fabric.

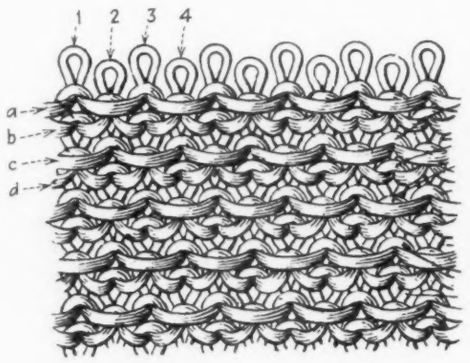


Fig. 1. Diagram showing construction of Rubenstein run-resistant fabric

To sum up briefly the avowed purpose of the companies exercising control of this invention, let us say

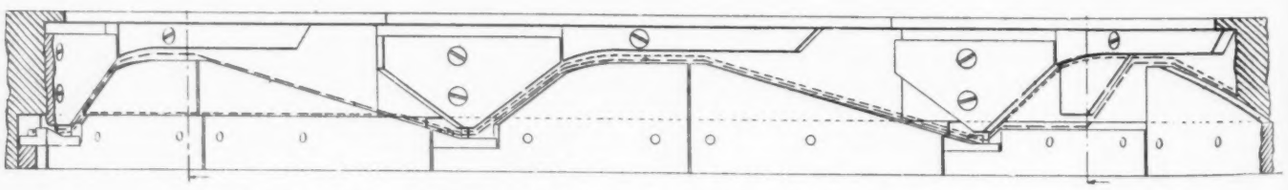


Fig. 2. Cam arrangement for knitting Rubenstein fabric on circular machines

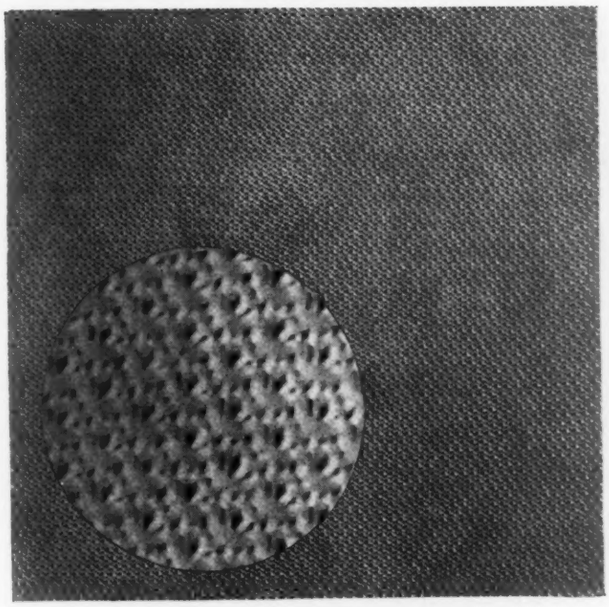


Fig. 3. Finished run-resistant fabric knitted on spring needles

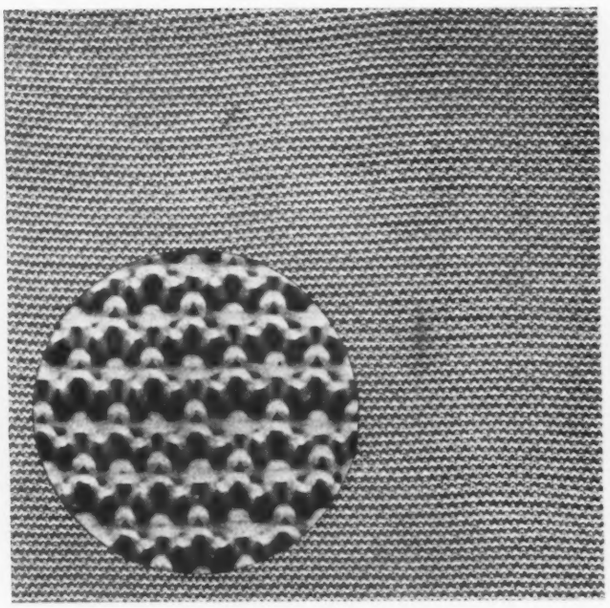


Fig. 4. Unfinished run-resistant fabric knitted on latch needles

that it is their wish to make it available to the knitting mills for quality production at less cost than would be the case under a small and directly profit-seeking ownership—with the ultimate object, of course, of expanding the popularity of circular rayon underwear and thus increasing the consumption of rayon.

The Inventor and the Patent

Now let us give some attention to the inventor and to the patent itself. Harry Rubenstein, the patentee, is associated with the Progressive Knitting Works, Brooklyn, N. Y. He applied for his patent in 1925. It was issued on April 22, 1930, under the number 1,755,968. He sold his rights shortly afterward to the Knitting Arts Corp., 475 Fifth Ave., New York, which is now controlled by the three rayon companies named, and to which all applications for license must be made.

In the purposely non-restrictive manner in which most patents are written, Mr. Rubenstein's invention is not confined to rayon underwear fabric, but covers a "knitted fabric" of the character described. Many will be surprised to learn that the patent makes no reference to a run-resisting property, but lays its emphasis upon "an unusual and highly attractive appearance." It is unlikely, however, that Mr. Rubenstein failed to recognize the true importance of his invention at the time he applied for his patent.

Although the main body of the patent states that the knitting method and apparatus are parts of the invention, the only claim, or at least the only one allowed by the Patent Office, is for the fabric itself. Therefore no control is held over the manufacture of the machine parts, and several machinery builders are ready to supply the necessary equipment for making the fabric. It can be made on latch or spring needles.

Design of the Fabric

The design of the fabric will be understood from a study of Fig. 1, which is reproduced, with new lettering, from the patent. Beginning with the upper course shown, it will be seen that thread *a* is looped into wale 1, is floated over the face of wale 2, is looped into wale 3, and is floated over wale 4. This alternate looping and floating is continued throughout the course. On the next course below, thread *b* loops into each and every wale in the usual manner. Thread *c* knits in a manner similar to that of thread *a*, but in the converse wales—looping over wales 1 and 3. Thread *d* knits into all wales, as in the case of thread *b*. The courses below those described are knitted in the same manner, each course differing from its predecessor in the same order. It will be noted that threads *b* and *d* form a foundation fabric beneath the staggered floats of threads *a* and *c* and that every wale has the same number of loops as every other. This arrangement naturally produces a somewhat thicker fabric than usual, but does not discard the important property of elasticity.

To make possible the production of such a fabric, it is necessary that alternate needles be separately controlled. In the machine described in the patent, this is made possible by providing one set of needles with long butts; and the alternate set, with short butts. A practical knitter will readily understand that cams can be arranged to so act upon these butts that on some courses one set of needles will be put into action; on other courses, the alternate set; and on still other courses, both sets. The experienced man will also realize that, on a machine of this character having a number of feeds which is a multiple of four, it is possible to so arrange the cams at the various knitting points that the yarn from each feed will knit the type of course desired in the proper order.

The paths of the butts through the cams in the machine described in the patent are shown in Fig. 2—in which the short-dash line represents the path of the short butts; and the long-dash line, that of the long butts. The motion of the needles is from right to left. It will be noted that the cams in the segment shown are arranged to knit first the short-butt needles, then both types, and finally the long-butt needles. Fig. 3 shows a sample of Rubenstein fabric knitted on spring needles, and Fig. 4 shows a sample made on latch needles.

Critical Study of Operations Precedes Modernization by Exposition Cotton Mills

By C. L. Emerson

Vice-President, Robert & Co.

THE Exposition Cotton Mills in Atlanta, Ga., was organized in 1898. For many years its earning record has been a source of satisfaction to its stockholders. The property now conisists of 60,000 spindles and preparatory machinery, with 1,566 looms weaving a wide range of heavy cotton fabrics, sold in the gray.

During the early part of 1930, J. A. Miller became executive vice-president and general manager of the corporation. He had formerly been president of the American Textile Co., Atco, Ga., which was sold to the Goodyear Tire and Rubber Co. during the fall of 1929.

Realizing the era of keen competition in cotton textiles had only begun and would probably continue for several years, and that only those mills which were thoroughly fortified against competition would be able to produce dividends, he instituted a thorough study into every manufacturing operation with a view to bringing it up to maximum efficiency. Various engineering studies were made under the direction of the executive committee of the company, and finally Robert & Company, Inc., Atlanta, Ga., were employed to draw plans for the changes and improvements contemplated and to supervise the work.

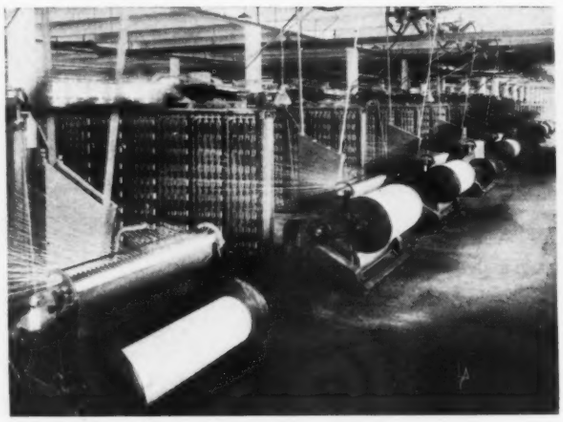
In order to understand the changes made, it is necessary to know that the mill buildings consisted of two divisions. The first division is a one-story part in the form of a cross, having, however, a second story on the north arm of the cross. This part is known as Mill No. 1. The other division consisted of a four-story building with the two lower stories extended east to join Mill No. 1. This multi-storied portion is know as Mill No. 2. Each of these divisions previously constituted a separate cotton mill from picking through weaving. There was a cloth room, opener room, and slasher room common to both mills. This arrangement necessitated several separate weave rooms and spinning rooms, with two card rooms.

Review of Changes

In brief, the new plan consolidates all the weaving in the No. 1 single-story mill, where conditions are ideal for this process. The second story on the north arm becomes a commodious slasher room. The area at the center of the cross is free of machinery, left vacant for storage and distribution of warp beams, cloth beams, and filling quills.

The south arm of the cross, originally a picker room, was dismantled, and a new two-story building erected in the same general area. The lower floor contains looms; and the upper, a new cloth room.

At the west end of Mill No. 2 a one-story addition was built to house the new picked room for the entire plant. It feeds directly into the first floor of the four-story building. In regular order come cards, drawing frames, and slubbers. The roving then passes up a high-speed elevator to the fourth floor, housing intermediates and speeders. From this floor the roving goes either to filling spinning on the third floor or warp spinning on the second floor. The spinning bobbins concentrate at a tramway, which conveys them to the No. 1 Mill. The Barber Colman spoolers and warpers are located on the second floor of the No. 2 Mill.



Type of high-speed-warping equipment adopted by Exposition Cotton Mills.

From the second floor of No. 1, the slashed warp beams and filling quills go down to the distribution area mentioned above. This re-arrangement has accomplished several desirable objects. Each process is consolidated so that one overseer can look after it properly. The only exception being the roving frames on the fourth floor of No. 2. There is a straight forward travel of goods, which minimizes the chances for mixing and reduces the quantity of cotton in process. The labor requirements are reduced. The entire operation is simplified. New high-speed elevators and mechanical conveyors assist in speeding up the traffic.

Cross-Shaped Weaving Area

For any large plant the ideal arrangement of weaving is in the form of a cross. It permits the maximum of light and ventilation with a minimum of travel. The raw materials radiate from the central area, and the woven cloth comes back to the central area, where it goes up the elevator to the cloth room. In this particular mill the arrangement is still more advantageous in that looms are segregated according to the width and product. The new weave room in the south arm is especially designed for the wider looms, which required different column spacing from the narrow looms. All drives have

been arranged under the floor, so that there are no loom belts visible in the weaving area. The advantages of this arrangement are readily appreciated by the practical mill man.

While the rearrangement of processes will unquestionably be of considerable advantage, a still more important step has been taken in replacing all antiquated machinery and in putting every machine retained in perfect operating condition.

All pickers have been junked, and new single-process pickers purchased. The opening equipment has also been revamped and increased by the installation of new feeders, openers, and Centrif-Air machines. Certain new drawing frames and roving frames have been substituted. A little later a large amount of spinning machinery will be installed and all the spinning converted to long draft. The Barber Colman spooling and warping equipment, is, of course, thoroughly modern. Several slashers have been purchased; and the balance, rebuilt.

All looms retained have been thoroughly overhauled and midget feelers installed. Before the moving program was begun, each machine was carefully inspected, and the necessary spare parts for renewal ordered. As the machine is relocated, these parts are installed, and any other repairs made to put it in perfect condition. Large sums have been spent on cards, roving frames, spinning frames, and looms in accomplishing this purpose. The new machinery is largely from Saco-Lowell Shops and the Draper Corp.

Subsidiary Services

The subsidiary services have not been overlooked, as the importance of proper humidity, light, temperature, and power supply in producing maximum output has been well established. An entirely new humidifying system is being installed by the American Moistening Co. A new electric lighting system has been contracted for with the J. M. Clayton Co., of Atlanta, which will also make the necessary changes in power wiring. The Crawford & Slayton Co. has the contract for heating and sprinkling in the new areas. Automatic-heat-control system is being furnished by the Johnson Service Co. Certain old group drives are being replaced with individual motor drives. Electrical equipment and motors are being furnished by the Westinghouse Electric & Mfg. Co.

Besides the construction of the new picker room and the cloth-room building, there will be considerable work done on replacing floors, improving toilet facilities, and removing unnecessary walls to consolidate floor areas. All this construction work is being done by the Sam N. Hodges Co.

At the present writing, the moving program is in process, the picker building completed and the pickers in operation. The cloth-room building is under construction and the new machinery arriving daily. Completion is expected about the last of March.

Special thought has been directed by J. A. Miller to the comfort of the operatives. Working conditions are being made as nearly ideal as possible. Plenty of ventilation is assured in summer. Heat and humidity are mechanically regulated. A new card-stripping system has been installed. Most belts have been eliminated. Sanitary conditions are being improved. All these and other features will contribute to working conditions which will reduce fatigue and strain, and which will, by this means and others, promote the individual efficiency of the workers.

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Cotton Goods Production-Demand Balance Good

IF cotton manufacturers continue to watch the balance between production and demand, they can close the year in a better statistical position than has obtained in any calendar year since 1926.

This is the most important single deduction to be drawn from the reports of production, sales and shipments of standard cotton cloths during November, released Wednesday by the Association of Cotton Textile Merchants of New York.

Total sales and shipments during the first 11 months of this year were both slightly in excess of production. Shipments were approximately 4% greater than output. With continued care, it will be possible to put 1930 on record as a year when the industry made what it sold—and no more.

Although the November figures were naturally not as bullish as those for October, they showed a better position than had been generally anticipated. The important facts are that shipments for the month came within 3% of production; stocks increased during the month only 1.7%, and unfilled orders decreased only 5%. Dr. Lewis H. Haney, editor of the TEXTILE WORLD *Analyst*, had stated prior to the issuance of this report that a decrease of less than 6% in unfilled orders in November and an increase of less than 8% in stocks, must be regarded as bullish. Actual figures came well within these limits.

The encouraging feature in the situation is that cloth manufacturers have demonstrated since May of this year their ability to curtail when they want to; consequently it is not too much to expect that they will continue to watch the invaluable barometer furnished by the Association of Cotton Textile Merchants of New York.

Details of Report

Production during November amounted to 206,633,000 yd., or at the rate of 51,658,000 yd. per week. This was 25.2% less than November, 1929, when the rate was 69,029,000 yd. per week.

Shipments during November were 200,661,000 yd., equivalent to 97.1% of production. Sales during the month were 183,067,000 yd., or 88.6% of production.

Stocks on hand at the end of the month amounted to 356,861,000 yd., representing an increase of 1.7% during the month. Unfilled orders on Nov. 30 were 333,251,000 yd., representing a decrease of 5% during the month.

While the rate of production during November was somewhat higher than in October, it was still far below the normal average—being 31% less than the peak and 24% below the average for the years 1928 and 1929. Total sales and shipments so far this year are both slightly in excess of production.

A.A.T.C.C. Hears Technical Papers and Elects P. J. Wood as President

TECHNICAL papers and discussions of a wide variety of subjects relating to textile chemistry and an elaborate program of entertainment featured the tenth annual meeting of the American Association of Textile Chemists and Colorists, at the Read House, Chattanooga, Tenn., Dec. 5 and 6. Approximately 300 members and visitors, representing the various branches of the industry both North and South, attended the meeting.

Election of Officers

P. J. Wood, vice-president and general manager, Oriental Silk Printing Co., Paterson, N. J., was elected president of the association to succeed Dr. E. H. Killheffer, of Newport Chemical Works, Passaic, N. J. Other officers named in the annual election were: W. H. Cady, of Slater Co., Inc., Webster, Mass., and H. A. Barnes, Proximity Print Works, Greensboro, N. C., vice-presidents; Harry R. Davies, Dyestuffs Corp. of America, Boston, Mass., treasurer (re-elected), and Alex. Morrison, American Woolen Co., Andover, Mass., secretary (re-elected).

In addition to the above officers who were elected for the usual one-year terms, H. M. Chase, superintendent of dyeing and bleaching, Riverside and Dan River Cotton Mills, Danville, Va., and R. Culver, vice-president, the Ciba Co., Providence, R. I., were named as councilors for three-year terms.

Need for Research on Cotton Textiles

The need for tests and research in cotton textiles was emphasized in the opening address of the Saturday morning session delivered by H. H. Willis, director of the Clemson College (S. C.) Textile School. He declared that leaders of the industry are coming to recognize the fact that men must have specialized training and qualifications to conduct tests and research. The importance of the technical man having some knowledge not only of the chemistry and test methods involved but also some experience in the practical use of materials in the mill. Several possibilities for additional chemical research in the cotton textile industry were suggested by Professor Willis.

The results of recent studies of the application of mineral-oil sulfonates to textiles were submitted by B. L. Hathorne, of Tubize Chatillon Corp., New York, N. Y., in the next paper. The properties of pure mineral-oil sulfonates, which have long been manufactured for use in other industries, were said to be quite as varied as those of coal tar distillates. Outstanding characteristics of mineral-oil sulfonates were said to include the following:

1. Extreme stability, even under conditions that destroy animal and vegetable oils.
2. When applied to textiles in the form of softeners and finishing compounds, they will not oxidize or become rancid, even after a long period of storage.
3. They are soluble in water and completely soluble in oils.
4. Pound for pound, the emulsifying properties of mineral oil sulfonates considerably exceed those of soaps and sulfonated castor oils, and as an emulsifying agent the first named are stable in the presence of mild acid solutions.

"Chemistry Applied to Finishing" was the subject of a paper by Paul F. Haddock, of A. Klipstein & Co., Charlotte, N. C., which was next on the program.

Dr. Carl Z. Draves, of E. I. DuPont de Nemours Co., Wilmington, Del., described a new method for testing the efficiency of wetting agents. He stated that in conditioning samples of cotton yarn for tests, a good plan is to avoid heating, which can be done by conditioning in a desiccator over a saturated solution of sodium nitrite which produces at 20° Centigrade a relative humidity of 66%. Dr. Draves declared that with the new method of testing one can determine the efficiency of a wetting agent as accurately as the chemist can test the efficiency of a dyestuff.

Latest developments in the dyeing of insoluble Azo colors were described by R. W. Marsson, of the General Dyestuff Corp., New York, N. Y., who touched upon several points brought out in contact with the trade. The last three years were said to have experienced a marked development in the application of Azo colors.

Following the annual business meeting, in which the usual committee reports and results of the election of officers were made public, a final group of five technical papers were presented. "Abnormal Fading" was the first subject of this group to be discussed. William H. Cady, of Slater Co., Inc., Webster, Mass., described various methods of determining the degree of abnormal fading.

Declaring that he could think of no industry in which the opportunities for progress in the technical field are

Dr. E. H. Killheffer, retiring president, American Association of Textile Chemists and Colorists

P. J. Wood, elected president, American Association of Textile Chemists and Colorists

greater than in the textile industry, William D. Appel, chief of the textile section, U. S. Bureau of Standards, Washington, D. C., emphasized the importance of technicians taking advantage of these opportunities by making their work more critical, more quantitative. In his talk entitled "The Critical Chemist and Colorist," the speaker stressed the advisability of not approving standards or methods of testing without obtaining adequate experimental evidence that the practical applications involved will be successful. He said in part:

"Color measurement is another subject of considerable interest to most of our membership which demands more critical attention not only in the standardization of the output of dyeing and printing works but in the control of dyestuffs of the bleaching and dyeing operations and the control of luster. It is only necessary to read the advertisements of the various photoelectric 'color' measuring instruments recently offered and the articles in the textile trade journals describing them to realize the need for a critical viewpoint. There is a great tendency for the colorist to close his eyes to the realities of his problems and, in the words of an authority, to allow 'the loose general statements of popular publicity to conjure up a robot which will speak English and answer "crimson," "scarlet," "cerese," "Alice blue," "battleship gray," "ashes of roses," "pea green," or "exact match of the sample you gave me last Tuesday," immediately when the office boy or general handy man about the plant inserts the sample and presses the button.'

"The critical colorist has in his experience a basis for at least a partial judgment of the limitations of these instruments as well as their possibilities for his purpose. He knows that the color of a dyeing depends on three factors: the nature and direction of the illumination, the reflecting properties of the dyeing, and the color vision of the observer. In considering any mechanical device to replace the method of visual inspection, it must be at once obvious to the colorist that the machine does not examine the dyeings to be compared from several angles of observation and illumination as he does when he examines them.

"Since in these newer machines a phctoelectric cell takes the place of the eye, the colorist should know whether the cell sees the same things that the eye sees and, if not, how this affects the usefulness of the machine. He should, of course, have a clear understanding of the difference between colorimeters and spectrophotometers, a matter of fundamental importance in the application of these instruments.

"I should like to refer those who are actively interested in the possibilities of newer photoelectric instruments to a letter written by I. G. Priest, of the Bureau of Standards, to O. H. Caldwell, editor of *Electronics*, on 'Determination and Specification of Color in Terms of the Spectral Distribution of the Stimulus, and the Application of Electronic Color Analyzing Devices Thereto.' A good many copies of this letter were distributed by the Colorimetry Section of the Bureau and I believe copies of it are still available for loan to interested parties."

Paper on Padding

In discussing "Padding; Its Limitations and Possibilities," Dr. E. W. Pierce, of the Ciba Co., New York, N. Y., stated that the closer the process adheres to the principle of printing the better will be the padding. The speaker suggested developing the colors by running goods through an ager.

Last on the program Saturday afternoon were papers by Ira L. Griffin, of Stein, Hall & Co., Charlotte, N. C., on "Starch in Textile Finishing," and by H. F. Shattuck, of Swann Chemical Co., Birmingham, Ala., on "Sodium Phosphate, its Manufacture and Use in the Textile Industry."

R. S. Wheeler, superintendent of bleaching and finishing, Crystal Spring Bleachery, Chickamauga, Ga., chairman of the South Central Section of the association, presided at the annual banquet which was held in the main ball room of the Read House Saturday evening. The address of welcome was delivered by Mayor E. D. Bass, of Chattanooga, to which Dr. E. H. Killheffer responded.

Robert W. Philip, editor of *Cotton,* Atlanta, Ga., spoke briefly on the recent industrial development of the South and discussed the present movement to eliminate women and minors under 18 years of age from the cotton mills at night. He was followed on the program by Dr. D. W. Daniel, of Clemson College, S. C., whose humorous and inspirational address was the climax of the evening's entertainment.

The special entertainment committee, headed by W. J. Kelly, Jr., sales manager, Burkhardt Schier Chemical Co., deserved much praise for the splendid program of entertainment presented both evenings, and for the delightful annual ball at the close of the meeting. Robert D. Sloan, superintendent, Standard-Coosa-Thatcher Co., headed the reception. R. C. Staples was chairman of the sight-seeing committee, while Ben R. Dabbs headed the finance committee.

Discussions at Open Forum

The open forum which was held immediately following the buffet supper Friday evening, consisted of a symposium on the newer metals employed in the dyebath. The first paper on "Factors Involved in Single Bath Degumming and Dyeing of Silk Hosiery," presented by L. J. McGinty, chemist, Knitting Department of Wiscassett Mills Co., Albemarle, N. C., and F. L. LaQue, of the development and research department, the International Nickel Co., Inc., New York, described in detail experiments conducted to determine if the metal in the dyeing machines was responsible for variation in the reduction of Durol Black. The investigation finally established that the amount of dissolved air in the dyebath was the elusive factor responsible for the difficulty.

The second discussion in the symposium on newer metals employed in the dyebath was on "The Fabrication of Chromium-Nickel-Iron Alloys," by J. S. Ewing, representing the Crucible Steel Co. of America. It was stated that an alloy containing 18% chromium and 8% nickel meets the requirements under a wider class of

conditions than other chromium-nickel alloys. Having remarkable strength, in spite of its softness, the steel can be welded by every method except hammer welding.

In milling machine work, the speaker explained, the material may be handled somewhat like 13% manganese steel. The alloy can be welded to any steel without difficulty from electrolysis and can be given a highly polished finish. The material was said to be particularly suitable for dyeing machines as it is not affected by the solutions.

Textile Progress Abroad

Another feature of the Friday evening session was an address by Dr. Chas. E. Mullin, professor of chemistry, rayon and dyeing at Clemson College (S. C.) Textile School, on "Textile Conditions and Processes Abroad," in which several interesting comparisons with similar conditions in America were presented. In part, Dr. Mullin's address was as follows:

"There are many reasons why we are able to do certain things better in American than they are ordinarily done in Europe. America is a newer country. Our forefathers were progressive; progressive enough to come to the new country, and succeed in their chosen lines of endeavor. Our ideas along many lines are more progressive than those of our neighbors abroad, and we are not hampered by precedent to the same extent as in some of the older countries. On the other hand, our textile industry has probably not been as progressive as some of our other industries, but we hope for improvements along this line in the near future.

"America has another tremendous advantage in the matter of the price of our manufactured goods. In no other part of the world is there the demand for high quality goods, such as exists in America. In no other country does the general public dress half so well as in America, nor spend nearly so much money for clothes.

"At the same time, I do not want you to believe that we lead in everything. Europe leads us in textile research so far that it will take us a long time to catch up. This research abroad is entirely supported by the government and the textile industry. The various employees' associations take no part in it.

"Right here I wish to point out a fact that was called to my attention by a friend in New York upon my return from Europe this fall. This friend is quite close to all branches of the textile industry and he pointed out that quite a few of the most progressive textile plants were still running very well in spite of the depression. In every case he mentioned, the plants were using synthetic yarns in some way, were very progressive, up-to-date, and had the best designers available. As this friend is in the rayon industry, he is better acquainted with the plants using rayon than those not using it, and there may have been quite a number of plants running just as well that were not using rayon. On the other hand, I have found that the European plants using some synthetic yarns in connection with their fabrics, as a class, are busier than the plain cotton or wool goods plants.

"Just how much is a man who can keep a plant going to capacity worth to a company? It is pretty hard to estimate this value but, like the rooster that rolled home the ostrich egg as an incentive to the hens, it is something for every man here to aim at, and I hope he hits the mark. The ability to do this is connected with the imagination and vision necessary to visualize and develop new materials, processes, methods and products. It is also necessary that the man who is going to have these ideas, and apply them, have the time, technical assistance, and apparatus at his disposal to run the experiments necessary in the development of these ideas.

Altogether too many American plants keep their best men so busy on production and routine work that they never have a chance to follow up and develop new ideas. One new idea, properly applied, may be worth far more than a year's routine work by the same man.

"Today England is leading the world in textile research. Germany is also doing a great deal more than America along this line. There is no doubt that we have seen a great change in the attitude of the American textile industry toward technical men in the last 10 or 20 years. It should not be long before American textile research will fully equal that of any other country in the world."

Dr. Mullin then discussed many of the chemical processes, methods and equipment used in the textile industry in England and Europe, and compared these with the American practice. He stressed the fact that the cheapness of labor in many European countries had not encouraged the widespread application of automatic and labor-saving machinery, whereas the comparatively high labor costs in America have stimulated our manufacturers to develop and install such machinery. In bleaching, for example, he stated that kier boiling varies more widely than in America, as labor costs are cheaper than chemicals, and the whiteness is obtained by a lighter boil and a heavier bleach.

Finishing Fabrics Containing Celanese

The paper, "The Construction of Celanese Fabrics as Related to Dyeing and Finishing Methods," presented Friday evening by Harry Price, of the Celanese Corp. of America, New York, N. Y., pointed out that originally it was found that available dyes were not suitable for acetate yarns. Consequently, the SRA colors were developed in the laboratory of the British Celanese plant and are now manufactured in the United States. There are several other ranges of colors suitable for dyeing cellulose acetate yarns.

Two precautions in dyeing and finishing Celanese were stressed. If the natural luster of the fiber is to be retained, Mr. Price stated that wet processing temperatures should not exceed 180° F., nor should strong alkali be used. Another point to remember is that the fabrics must be dyed slowly because of the moisture resistant qualities of acetate yarns.

When oil stains do get on the fabric in gray goods mills, they should be left on rather than to attempt removing with some unsuitable cleaning agent which may create a much larger stain. In cases where it is desirable to use finishing oil or gum as a softening agent, in finishing, it is preferable to add the oil or gum in the final or cold rinse.

Crepes should be dyed in reel machines, but should be thoroughly wet out in open width before being placed on the reel as a precaution against creasing. After dyeing the goods should be given the usual warm and cold rinses, subsequently run over a vacuum or suction extractor and then finished in a crepe net dryer. Yarns should be given an oil emulsion finish, after dyeing, in order to facilitate winding.

Considerable progress has been made in commercial discharge printing of Celanese fabrics, according to Mr. Price, who said that even black and navy blue shades can be obtained in this way without affecting the chemical structure of the material. In reply to questions, the speaker stated that no delustering agent other than temperature is necessary in the case of Celanese materials and that hydro-sulfide is a safe stripping agent to use on Celanese.

Farmers and Wives View Latest in Wool Costumes

WOOL growers, among those attending the 12th annual convention of the American Farm Bureau Federation held in Boston, were particularly interested in the fabric and fashion exhibit of American loomed woolens and worsteds presented at the Statler Hotel Dec. 8, and later at the Jordan-Marsh store on the evening of Dec. 9. Over a thousand delegates representing 1,600 communities attended the convention.

Under the direction of Elizabeth Hallam Bohn, stylist of the Woolen Institute, many charming costumes were modeled for the edification of farmers and their wives, thus effectively meeting the challenge to have a wool style show which was voiced at the last meeting of the Bureau, held in Chicago, where a cotton style show was presented.

L. B. Warner, of the Ohio Farm Bureau, was largely instrumental in planning the show and as a reward for his efforts he was forced to walk down the runway modeling a new suit, made from fabric produced by the Botany Worsted Mills. In introducing the fashion show Mr. Warner stated that producers of raw materials were always interested in consumer acceptance of fabrics made from their raw material and he considered it appropriate that the show should be held in a wool trade center.

Mrs. Charles W. Sewell, house and community director of the Federation, spoke for the farmers' wives and stated that they were always keenly interested in what was being worn at Palm Beach and other fashionable centers, although they were generally too busy with prosaic farm duties to visit these entrancing places in person.

Miss Bohn, before introducing the models, read a message from A. D. Whiteside, president of the Wool Institute, in which he commented on the fact that such a style show was particularly appropriate at this time when wool was riding the wave of popularity for women's wear. Miss Bohn emphasized the fact that the costumes shown represented Paris models adapted to American needs in a practical, wearable fashion.

The following mills were represented in the fabrics used in the costumes: Botany Worsted Mills, J. P. Stevens & Co., Hamilton Woolen Co., H. Ernstberger & Co., Roubaix Mills, Inc., Strong Hewat Co., and Deering, Milliken & Co. (as selling agents for the Cowan Woolen Co., Madison Woolen Co., and Pondicherry Woolen Co.).

In addition to the women's wear style show there was an exhibition of men's wear suitings, and wools in the various stages of manufacture in the lobby of the ballroom. Among those who exhibited were: Rosemont, Alsace and Montrose Mills of Guerin Mills, Inc.; Monomac Spinning Co.; Botany Worsted Co.; Kent Mfg. Co.; and Lorraine Mfg. Co.

TEXTILE WORLD Cotton and Wool Indexes

COTTON INDEX NUMBERS

Date	Cotton	Yarns	Gray Goods	Colored Goods	Average for Cloths	Group Average
July 31, 1914	100	100	100	100	100	100
1925						
January	192	197	195	173	184	187
April	196	194	193	180	187	188
July	197	183	185	176	181	182
October	174	189	193	178	186	186
November	167	180	184	174	178	179
1926						
January	167	175	177	162	170	171
April	153	163	161	155	158	159
July	149	149	151	141	146	147
October	106	141	147	144	146	143
November	103	137	143	144	144	141
1927						
January	107	134	140	140	140	138
April	118	136	143	142	143	140
July	143	149	156	145	151	150
October	168	176	184	169	176	176
November	161	169	176	170	173	171
1928						
January	151	163	166	166	166	165
April	164	160	160	165	162½	162
July	174	167	165	168	166½	167
October	157	161	162	164	163	162
November	159	165	162	164	163	163
1929						
January	162	166	158	169	163½	164
April	163½	164	157	173	165	165
July	149	160	149	166	158	158
October	147	160½	155	161	158	158
November	140	156	152	161	156	156
1930						
January	138	149	141	157	149	149
February	125	144	134	157	145	145
March	120	138	130	157	144	142
April	131	139	129	156	143	142
May	131	136	129	156	142	141
June	116	127	120	150	135	133
July	105	120	119	142	130	128
August	96	115	114	142	128	124
September	87	112	114	136	125	121
October	85	110	115	125	120	117
November	88	110	116	126	121	118

IN NOVEMBER the monthly raw cotton index registered its first advance since last April, from which point it had declined steadily from a high of 131 to the low point of the year of 85 touched in October. In the fourth week of November, however, there was a slight reaction and the index dropped 2 points to 86. While the monthly yarn index was unchanged from the October average, the index of 109 for the fourth week represents a loss of 4 points from the last week of October. Both gray and colored goods are up 1 point for the month and are now 2 points above their lows of the year.

The easiness in wool prices which became apparent in the latter part of October was accentuated throughout November, and in the fourth week of the month this group had declined to 120, or three points below the fourth week of October. Tops were affected sympathetically, and for the same period were off 2 points. Worsted yarns and cloths remained unchanged.

Inquiries regarding interpretation and use of TEXTILE WORLD index numbers may be addressed to the Statistical Dept., 1427 Statler Bldg., Boston, Mass.

WOOL INDEX NUMBERS

Date	Wool	Tops	Yarns	Cloth	Group Aver.
July 31, 1924	100	100	100	100	100
1925					
January	215	213	211	229	221
April	219	234	230	241	235
July	216	217	216	239	227
October	216	212	212	227	220
November	219	217	214	228	222
1926					
January	215	213	211	229	221
April	181	193	198	224	208
July	173	184	189	215	199
October	178	186	193	209	198
November	178	187	194	209	199
1927					
January	178	187	190	209	198
April	177	182	184	211	196
July	180	183	183	211	196
October	185	185	189	211	199
November	188	186	188	211	199
1928					
January	194	193	186	212	201
April	199	206	198	215	208
July	204	206	203	214	209
October	197	197	203	212	206
November	199	196	201	212	205
1929					
January	199	198	201	211½	206
April	187	189	198	211	202
July	169	170	188	211	194
October	164½	169	188	211	194
November	163	165	187	211	193
1930					
January	148	161	177	211	188
February	138	150	173	209	183
March	132	144	169	202	177
April	127	139	164	202	175
May	124	136	159	202	173
June	124	135	160	202	173
July	125	135	158	200	171
August	125	135	158	200	171
September	125	135	157	200	171
October	124	135	154	200	170
November	121	133	154	200	169½

Planning the Construction of

Non-Square Woolen and W

By Robert A. C. Scott

In the article "How Many Ends and Picks Does the Weave Call for?" which appeared on page 32 of our issue of Sept. 13, Mr. Scott discussed the determination of suitable settings for square cloths. In this article he considers non-square cloths, and, for illustration purposes, presents construction details for broadcloths, including the treco, crepe, twill, and billiard-cloth types; union cloths; whipcords; corkscrews or round twills; Bedford cords; and sateens.

ALTHOUGH the study of "square cloths" published in the Sept. 13 issue of TEXTILE WORLD was not by any means a comprehensive treatise on the subject, it is hoped that it has created sufficient interest to warrant a deeper and more extensive study of the subject. A good understanding of the basic principles of "square cloths" is a preliminary, yet essential, step in the direction of a better and more intelligent understanding of those fabrics which we may designate as "non-square cloths" in contra-distincton to "square cloths." The chief characteristics of these fabrics may be classified in the following two groups, and will be considered in that order: (1) cloths in which the weights, counts, and threads per inch of warp differ from those of filling, and (2) cloths which employ weaves in which the bending of warp threads differs from the bending of filling threads.

When Counts Differ

In cloths in which the counts of warp differ slightly from those of filling, the average of the diameters may be used. For instance, in an ordinary plain-woven worsted cloth made with 1/20s warp (95 diameters) and 1/30s filling (116 diameters), the intersection theory fully explained in the preceding article gives 48 and 58 ends respectively. Therefore by taking the average, 53 ends and picks could be taken as the maximum setting. Should you, however, desire to have the warp or filling predominate, the setting may then be altered to 53 ends and 46 picks or 46 ends and 53 picks.

On the other hand, where the difference in counts of warp and filling is considerable, each must be considered separately and in conjunction with the weave employed. Assume we wish to make a good serviceable cloth of a velour or suede type using 1/30s worsted warp and 4-run woolen filling, employing weave *A*, which is the broken crow, filling flush. Then for 30s worsted $(116 \times 4) \div 6 = 77$, the maximum ends per inch according to the theory of diameters in this weave; and for 4-run woolen $(68 \times 4) \div 6 = 45$, the maximum picks.

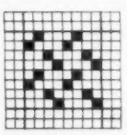
A good velour fabric, however, requires a bigger percentage of the woolen yarn. Therefore, by reducing the maximum warp threads by 10%, we are able to increase the filling picks in proportion, giving us a construction in the loom of 70 ends and 50 picks. This would give a very satisfactory cloth. The finishing processes to which these cloths are subjected cover the face with a dense pile which completely conceals weave and texture.

An entirely different cloth, however, would result from using weave *B*—broken crow, warp flush—with a setting of 86 ends and 40 picks. In this case a warp-faced fabric of a worsted nature with a woolen back would develop, necessitating a complete change in the finishing processes. Warp-faced cloths generally are woven with more ends than picks per inch, using a finer thread in the warp than in the filling, while in filling-faced cloths the conditions are reversed.

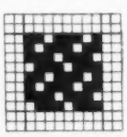
Broadcloth Construction

The original broadcloth construction comes under the "square-cloth" group; but, owing to its great and increasing popularity, it has been subjected to many modifications in construction. This cloth is one of the oldest types of woolen cloths. It is made with a fine grade of wool, in plain weave, and is heavily fulled, napped, and boiled in order that it may have the luster typical of this fabric. A good construction would be as follows:

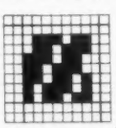
Warp, 4-run, fine-grade woolen, left twine, firm spun.
Filling, 4-run, fine-grade woolen, right twine, loose spun.
Threads in warp, 34.
Picks in filling, 38 to 40
Width in loom, 90 in.
Weave, plain.



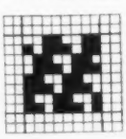
Weave A. Broken Crow, filling flush



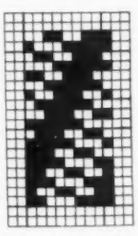
Weave B. Broken crow, warp flush



Weave C. For Whipcord



Weave D. For Whipcord



Weave E. For Whipcord

Worsted Fabrics

Plain Broadcloth

Note the width in loom, which incidentally explains the origin of the term "broadcloth." The chief features of this cloth are its soft and pliable handle, lustrous face, and complete concealment of all textural characteristics. The latter feature applies to all cloths having a dress-face finish, such as doeskins, beavers, billiard cloths, etc. In spite of this fact we find the market flooded with fabrics designated as "crepe broadcloths," "treco broadcloths," and "twill broadcloths," terms which, besides being misnomers, are contradictions. Since, as already pointed out, the nature of this fabric is its special finish, completely concealing all weave and texture characteristics, it will be quite obvious that once a crepe, rib, or twill effect is visible, the cloth ceases to be what is technically known as a dress-face fabric, to which category all broadcloths belong.

Treco broadcloths bear a close resemblance to the original cloth, differing chiefly in the unequal size of yarn in warp and filling. In this instance, the warp is generally finer than the filling but is set about the same number of ends as picks. Like the original, it is woven in plain weave; but, owing to the thicker filling, a rib effect is produced—hence the name "treco." In finishing, the filling, which has less turns of twist per inch than the warp, responds more readily to the action of the teasels, which, instead of concealing the weave, accentuate the cord effect running across the piece.

Crepe and twill broadcloths are as a rule set square, the respective effects being obtained by means of the weave. Crepe weaves contain no twilled or prominent effect, but give the cloth the appearance of being covered by a series of small pebbles.

Although this cloth was originally a woolen type, its outstanding merit as a volume seller has been taken advantage of, with great success, by the worsted manufacturers. By using a construction similar to that given for a suede or velour, and giving the fabric a dress-face finish, some very good results have been obtained. The latter of course is made with a fine quality of stock in both warp and filling—especially the filling—and is set fairly wide in the loom.

Whipcord

Billiard cloths generally have the same counts of yarn in warp and filling, but the warp has about 50% more turns of twist per inch than the filling, as well as contrary direction of twist. In constructing a cloth of this nature, it would be well to bear in mind the equal tensile strain of warp and filling which this fabric demands. For this purpose, therefore, it is advisable to have a firmly spun yarn for warp and to set about the maximum to attain the required tenacity and soundness of structure in the length of the piece. The strength and soundness of construction in filling is derived by inserting an excess of picks to threads per inch. The filling, being more loosely twisted, improves the felting and raising qualities of the cloth, and retains the required firmness of texture.

The following construction data would produce a very satisfactory cloth of this type:

Warp, 4½-run, fine merino wool, 18 turns per inch, left twine.
Filling, 4½-run, fine merino wool, 12 turns per inch, right twine.
Width in loom, 108 in., to give 72 in. finished.
Threads in warp, 34 per inch.
Picks in filling, 44 per inch.
Plain weave.
Width contraction, 33%.
Length contraction, 25%.
Finished weight, 19 oz. per yard.

Union Cloths

Union cloths are composed of two or more different classes of yarns, such as cotton or rayon warps with woolen, mohair, etc., fillings, or a mixture of vegetable and animal fibers in warp and filling. The advantages of this type of cloth are cheapness in production, increased tensile strength, and adaptability to fancy and novel effects. They, however, lack the pliability of an all-woolen fabric, no matter how they are constructed, due to the fact that the vegetable fiber does not possess the elasticity of staple, softness of handle, and disposition to felt which characterize the wool fiber.

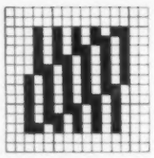
It is, however, the absence of this felting property in the one, coupled with this natural ability in the other, which facilitates the attainment of novel effects. For instance, by combining cotton and woolen threads in various proportions in warp and filling, in conjunction with a special order of weaving, a cockled or puckered irregular appearance is obtained after finishing, due to different degrees of shrinkage of the respective fibers during the process of fulling. Both cotton and rayon wastes are largely used in various proportions blended with wool in yarn manufacturing; but unless they are used sparingly, a very hard and harsh-handling yarn results, which in turn impairs the feel of the fabric and detracts from its selling value.

In constructing union fabrics, it is a general practice to have a larger proportion of woolen yarn than the cotton or synthetic yarn, by way of improving both the

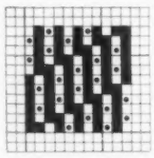
appearance and handle of the finished product. It is hardly necessary to mention that cloths which have unequal weights, counts, and threads per inch in warp and filling include a very large variety of fabrics—too numerous, in fact, for individual notice here. It may be stated, however, that the same method of construction applies to these cloths as applies to "square cloths," differing in the respect that warp and filling calculations are made in conjunction with their respective counts and weave intersections and the degree of prominence desired of each.

The practical adaptation of "non-square cloth" constructions in the textile industry affords the designer unlimited scope for the creation of new fabrics, without incurring the expense of making new yarns, and often enables the marketing of two or more fabrics made from the same yarns.

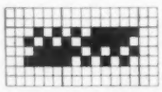
Certain cloths which employ weaves in which the amount of bending of warp threads differs from that of filling threads are described here:



Weave F. Corkscrew or round twill



Weave G. Modification of weave F



Weave H. Fine cord effect

Whipcords

The chief textural characteristics of whipcords are their steep, distinct, and clearly defined twills, which are made possible by the manner of construction, weave, and nature of yarns employed in warp and filling. Whipcords are made with either worsted warp and filling, woolen warp and filling, or worsted warp and woolen filling. A two-ply yarn is used in the warp in every case; and generally single yarn, in the filling. It is important, however, that the two-ply yarns be even and uniform in character and harder spun than the filling yarns. The latter, besides being soft or medium, give better results if finer in diameter.

The threads in the warp should be set as close as the diameters of the yarn employed will permit and wide enough in the loom to provide for 30 to 35% shrinkage. The picks per inch are slightly in excess of the intersection theory already explained. In finishing, *width* and not *length* shrinkage is practiced, so the loss in length is practically nil.

The following are examples of the three types mentioned above:

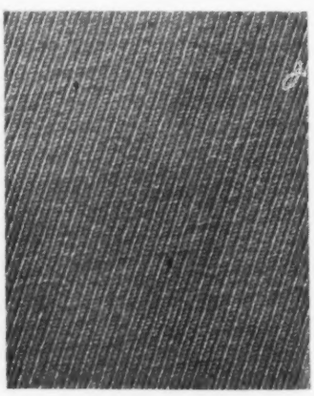
1. Worsted warp and filling:
   Warp, 2/36s worsted, 96 ends per inch.
   Filling, 1/25s worsted, 80 picks per inch filling.
   Width in loom, 80 in., to finish 56 in.
   Weave, C $\left(\frac{5}{2}, \text{ move } 2\right)$.
   Width contraction, 30%.
   Length contraction, not over 2%.
   Finished weight, 19/20 oz.
2. Worsted warp and woolen filling:
   Warp, 2/30s worsted, 90 ends per inch.
   Filling, 6-run woolen, 60 picks per inch.
   Width in loom, 80 in., to finish 56 in.
   Weave, D $\left(\frac{4\ 1}{2\ 1}, \text{ move } 2\right)$.
   Width contraction, 30%.
   Width contraction, not over 2%.
   Finished weight, 21/22.
3. Woolen warp and filling:
   Warp, 6/6-run woolen twist, 60 ends per inch.
   Filling, 5-run woolen, 60 picks per inch.
   Width in loom, 80 in., to finish 56 in.
   Weave, E $\left(\frac{7\ 1\ 1\ 1\ 1}{1\ 2\ 1\ 2\ 1}, \text{ move } 2\right)$
   Width contraction 30%.
   Length contraction, not over 2%.
   Finished weight, 21/22.

The above constructions are very firm and a 5 to 10% reduction is quite practical, although it may result in a less clearly defined twill. Only fine and good-felting-quality wools should be used, to facilitate the width shrinkage. The correct methods of manufacture may be summarized as follows:

1. The use of uniformly spun, two-ply yarns, of good felting quality.
2. Setting wide in loom to provide for full degree of width contraction in fulling.
3. The use of a finer filling than warp yarn, closely picked.
4. A minimum degree of shrinkage in the length of the piece.

Corkscrews or Round Twills

Corkscrew or round-twill weaves have been extensively used in the manufacture of worsted coatings and trouserings. At present this type is gaining wide popularity as a novelty-weave effect in ladies' velour finished coatings. The origins of the terms "corkscrew" and "round twill," are not known. Suffice it to say that the designations in no way convey to the uninitiated a true picture of the appearance of the woven material. Naturally one would expect to find a corkscrew or wavy effect and to discern the feature of roundness, but none of these characteristics are sufficiently pronounced to account for the origin of these technical names. The probability is that the weave was named in this manner by way of obtaining a novel and rather fantastic appellation to deceive the uninitiated and at the same time hasten its acceptance as a new article.



Tricotine, similar to corkscrew

In constructing this type of cloth, the best results are obtained by using a two-ply worsted yarn for warp and a single worsted or woolen yarn for filling. In warp corkscrews, finer warp yarns are the rule rather than the exception, and are set as close as the diameters of the threads will permit. For filling corkscrews, the above conditions are reversed; i.e., finer filling and more picks than ends are used. A typical example for a ladies' coating fabric is as follows:

2/48s worsted warp, 96 ends per inch.
7-run woolen filling, 56 picks per inch.
Width in loom, 70 in., to give 54 in. finished.
Width contraction, 22 to 25%.
Length contraction, 2 to 5%.
Finished weight, 13/14 oz.
Weave, F (11-end warp corkscrew)

The above construction could be reduced from 5 to

10% and yet retain a solidity and firmness of texture sufficient to meet the market requirements. A further reduction would be possible by using weave *G*, which is a modification of weave *F*. By stitching the floats on the back as indicated in *G*, the weave is made firmer without interfering with the face effect, whereas on the back an effect similar to the plain weave is produced.

In all worsted corkscrews, which lack the high degree of felting property possessed by the woolen type, it is a general custom to increase threads and picks per inch and reduce loom width. In other words, setting is influenced by finish, and *vice versa*, so that a knowledge of the finishing processes is a valuable adjunct to the correct construction.

Bedford cord

Bedford Cords

Bedford cords, as the name implies, are distinguished by a series of longitudinal warp lines or cords with fine sunken lines between each cord. In weaving, it is a general and advisable practice to employ two beams, to facilitate the tension adjustments which the difference in take-up between the plain and cord ends necessitates.

The width of the cord has a direct bearing on the setting of these cloths, but the general procedure is to set as close as the diameters of the threads will permit. When a very fine or narrow cord effect is desired, a reduction of from 10 to 20% would be desirable, without impairing the resultant fabric. By inserting wadding ends, which give greater prominence to the cords, due allowance for these additional heavier ends must be considered in computing the ends per inch.

These three examples will illustrate the principle:

1. Weave, *H* (fine cord effect).
   1/30s worsted warp; reduce from 116 to 92 ends per inch.
   1/25s worsted filling, (about 20 to 30% in excess of plain-weave calculation), 70 picks per inch.
   Width in loom, 70 in., to finish 56 in.
   Finished weight, 12/13 oz.
2. Weave, *I* (wide cord effect).
   1/30s worsted warp, 112 ends per inch.
   1/25s worsted filling, 64 picks per inch.
   Width in loom, 70 in., to finish 56 in.
   Finished weight, 12½/13 oz.
3. Weave, *J* (wadding thread inserted).
   Warp pattern:

1/30s worsted	3 2 3
2/30s wadding thread	1 1

   90 ends per inch.
   1/25s worsted filling, 62 picks per inch.
   Width in loom, 70 in., to finish 56 in.
   Finished weight, 13/14 oz.

By way of further accentuating the sunken lines in the above weaves, the plain ends should be separated by the splits in the reed.

Sateen Weaves

Fabrics made with sateen weave have a smooth, soft texture, due to the warp predominance and parallel arrangement of the threads—in a warp-faced—and the irregular or broken order of filling interlacings. The latter characteristic prevents any distinct or definite weave formation. In a filling-faced type the conditions of course would be reversed. The principal cloths which employ this type of weave are linings, trimmings, ribbons, and dresses, of cotton or silk manufacture. In the woolen and worsted field, it has been universally adopted in compound or double cloths, as a backing medium, commercially known as sateen backed cloths.

In constructing sateen fabrics the diameter of the thread may be taken as the ends per inch; and the picks, in accordance with the intersection theory. It may be pointed out, however, that this will vary according to the weave employed; for example an eight-end sateen would require more ends per inch than a five-end sateen, owing to the firmer type of the latter weave. Further, in warp sateens, better results are obtained by employing finer counts in warp than filling, which insures the complete concealment of the filling binding intersections on the face of the cloth. In filling sateens the reverse conditions would obtain. Using 30s worsted warp and 20s worsted filling in an eight-end sateen weave (*K*), the number of ends would be 116; i.e., the diameter of 30s worsted. The picks per inch would be

$$\frac{95 \text{ diameters} \times 8 \text{ picks in weave}}{8 \text{ picks in weave} + 2 \text{ intersections}} = 76$$

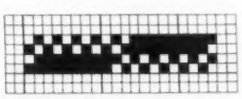
The above picking could be increased from 5 to 10% without altering the warp construction and yet retaining all the sateen characteristics. This, however, would require modification if a five-end sateen weave were used. The ends per inch in this instance would be anywhere between 100 and 90, and the picks would be from 64 to 72.

It will readily be seen from the foregoing that the three chief factors to be borne in mind when constructing cloths in which the bending takes place in the warp, while the filling remains comparatively straight, are:

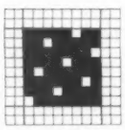
1. Setting the threads in the warp either as close as their diameters will allow, or a small percentage under, in accordance with the frequency of weave intersections or degree of floats.
2. Setting wide in the loom to allow for contraction in finishing, varying from 25 to 35%.
3. The use of the intersection theory for finding the approximate number of picks per inch.

For filling-faced cloths, the conditions noted above would be reversed.

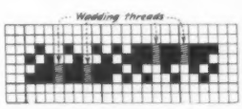
Owing to space limitations, only the better-known cloths have been considered here. The principles are applicable to all cloths possessing the characteristics outlined above. The hope is expressed that this and the preceding article have been of value in imparting a better understanding of cloth design and manufacture.



Weave I. Wide cord effect



Weave K. Eight-end sateen



Weave J. Wadding thread inserted

OVERSEERS' ROUND-TABLE

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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Overseers and Machinery Expositions

Editor, Overseers' Round-Table:

TEXTILE MACHINERY expositions are a godsend to the textile manufacturer. If the company is one that believes in cooperating with its overseers and wants to keep the plant up to date, one overseer should be picked as a representative and sent to view the exhibits. When the overseer returns, all information could be broadcast to his fellow overseers. There is no question but that he would secure enough information to offset all the expenses which the company incurred.

There are not many overseers in the textile business today who are not interested in cutting down overhead and bettering quality and production. The textile machinery exposition is the one place where an overseer can get wide information and schooling. "AN OVERSEER"

Editor, Overseers' Round-Table:

AN ANSWER to the question of who should pay the overseer's expenses to a machinery exposition can be set down thus: the firm will benefit owing to the overseer's increased knowledge and wider outlook; the overseer will benefit because his increased knowledge will better fit him for promotion.

I think that if the firm gives the overseer time off and pays 50% of his expenses the overseer can consider himself fortunate. I know many overseers who would willingly pay all their expenses to visit a machinery exposition.

W. E. W.
Herts, England.

Hiring a Discharged Employee

Editor, Overseers' Round-Table:

TO THE question, "do you believe in ever re-hiring a worker you have discharged," I answer:

Emphatically, No!

Workers should not be discharged for light or transient reasons. When the fact developes that an operative is permanently undesirable, then—and only then—is discharge justifiable.

Workers, other than "permanently undesirables," can be "jolted" sufficiently by laying them off temporarily.

HOMER EMERY.

Editor, Overseers' Round-Table:

THERE IS sound common sense in Hank's opinion, according to my experience in several mills. At the same time it is not possible to lay down any hard-and-fast rule applying to all conditions. I have seen a re-hired man prove a success over a period of years and another fail in a few weeks.

The question bristles with important points, and as it is no use applying surface treatment to a deep-seated ill, we must discuss the source, namely, the method of hiring. Greater care is exercised today in hiring a man than ever before, but even the best system is not perfect for we cannot determine how a man will react to certain mill conditions.

The time comes when trouble arises; when a man falls short in some respect and the question of dismissal comes up. The power to discharge is a responsibility and a man should never be dismissed until every aspect of his case has been studied thoroughly. Excessive turnover is a deadly

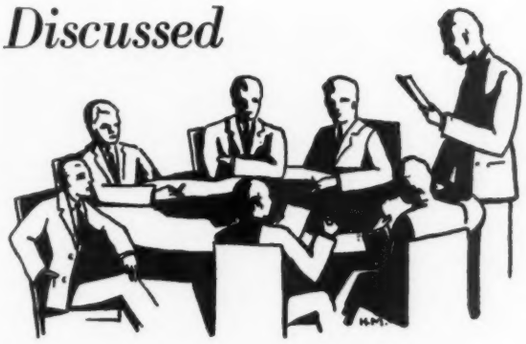
Overseers' Associations

"MOST of you," Superintendent Chase opened the meeting, "either belong now, or have belonged at some time in the past, to some overseers' association. I don't question the value of such associations, but I have heard quite a bit of difference of opinion on how the meetings should be conducted. Some seem to think that when a meeting is held it should deal with various technical problems while others want the meetings to be mostly social. What is your opinion?"

"I have been a member," Bill spoke up, "of several overseers' associations in my day and I must say that I vote in favor of good time social meetings. I like to go to the meetings and see old friends, and meet new ones, and just sort of relax and sit around and gas. Naturally, a good part of the conversation deals with our jobs and I can pick up a lot of information in addition to having a good time. If you make the meetings technical you can't discuss subjects that everyone is interested in and, as a result, many stay away and the meetings are attended only by a small group of serious souls who are interested in the particular problem discussed. Everyone is interested in having a good time, so make the meetings a good party. Then lots of overseers will attend and, as far as getting information is concerned, you can sit around with a few friends and pick up a lot more useful stuff than you could listening to speeches, most of which are about some particular problem that doesn't concern your department."

"I haven't been in the game long enough," Pete came back, "to attend as many meetings as Bill has, but I've always been more or less disappointed in those I have gone to. Once you begin making the meetings mostly a good time you'll soon get to the point where nothing whatever is said about technical problems and a stranger wouldn't know whether it was a meeting of retired ball players or a gathering of some political party. One of the greatest benefits of an overseers' association is that

Are Discussed



it gives the younger element a chance to learn more—and they usually don't need to be taught how to have a good time. I think you will find that a young overseer is anxious to learn everything he can, even though it doesn't concern his particular department and, in addition, I think Bill is exaggerating when he says that most of the problems interest only a small group, because they are picked to interest many.

"As far as sitting around with a few old-timers and listening to what they have to say," Pete smiled, "I've found that most such conversation in a hotel room late at night isn't very practical—it's a little too rambling, if you know what I mean. Then again, the younger overseers don't have much chance to sit in on the old-timer's leagues. My idea is that when you go to all the trouble and expense of attending a meeting of some overseers' association and when the company probably gives you at least a day off, you want to get some solid information to repay you. It seems foolish to have a textile overseers' association and then have the meetings nothing much but a big time. I can have my good times with a lot less fuss than that."

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Do *you* think that meetings of overseers' associations should be concerned with social or technical activities?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

menace to the prosperity of the mill, giving low production, low quality and a general feeling of dissatisfaction.

Therefore, a man who has been justifiably discharged need not expect further consideration. If he wishes to re-engage he can only do so on the terms of the mill.

Selecting operatives carefully means fewer dismissals and fewer re-hirings. As a general practice re-hiring should be avoided, but under the conditions enumerated, when an acute labor shortage arises, rehiring can benefit the firm. W. K.

Editor, Overseers' Round-Table:

To REHIRE a man after he has been discharged is something that should be done very rarely, if at all, and then only in a very few exceptional cases in which the discharging has accomplished what other methods could not do.

It is far better to try every conceivable method to correct a man's trouble, or the difficulty you have with him, after he has been employed and time and money spent on his training. By a careful study of a man during his working and idle time, by talking with him, etc., it should not take long to determine what the trouble is. If he is a wanderer, put him on piece rate; if he is a misfit, try him on other jobs in your department or other departments; or use other ingenious remedies that every overseer should know.

H. B. S.

Overseers and a Bonus

Editor, Overseers' Round-Table:

No, I WOULD not pay overseers a bonus in any case.

The overseer is there to do his utmost all the time and if he does that he should be paid straight salary without any strings attached to it. If he doesn't do his utmost he shouldn't be there.

Where a bonus system is in operation there is always the chance, or perhaps even the incentive, for a man to do some juggling with the production so that he would draw the bonus two weeks out of three. Where the bonus system does not exist there is no such undesirable element. If I had a particularly good man who was surpassing expectations I would rather give him a permanent advance in wages than a bonus, and I believe there are some who should be treated thus without further delay. A. COOPER.

Editor, Overseers' Round-Table:

MY PERSONAL experience and observations prompt me to advance the idea that there is no surer plan for keeping men on their mettle and decreasing the cost of operation than the bonus plan.

There is a streak of gambling in all of us and any man will work harder for that which is just beyond his reach than he will for a salary which is definitely assured.

As I see it the overseer should be paid a definite salary. and then a certain per cent for any amount of goods that he turns out beyond a certain limit.

I do not agree with Bill that this will be a temptation to hold back one week to get the bonus the next, because any man who is worthy of the title of overseer will want to get the bonus each and every week. JOHN.

Will S. L. Mairty kindly supply his address to the Editor of the "Round-Table"?

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Summary of Discussion on Visiting Machinery Expositions

The question was whether the company should pay the expenses of selected overseers to visit nearby machinery expositions. Stating that what the overseer gained from such a visit was primarily of benefit to the company, 54% of the contributions thought that the company should bear the expense. An additional 9% favored the company paying expenses when some definite installation was being considered which it was desirable for the overseer to look over. 27% of the contributions said that the overseer should pay his own way if he desired to attend, since it was to his own personal advantage to do so. The remaining 10% of the letters stated that the circumstances should govern each individual case. One contribution suggested that the company pay 50% of the expense.

NEWS about MEN

At a meeting of the directors of the Pilot Hosiery Mills, Asheboro, N. C. D. B. T. Bell was elected president to succeed W. H. CARMICHAEL, who recently resigned; W. P. HARDER, of Greensboro, for the last five years manager for the Bradstreet Co., vice-president, and IRVING HARRINGTON, secretary.

SIDNEY BLUMENTHAL, president of Sidney Blumenthal & Co., Shelton, Conn., was elected chairman of the board to succeed the late S. HARVEY DAY. HERBERT H. SCHELL, vice-president, was named general manager and elected to the board. ANDRE BLUMENTHAL was elected a vice-president and PHILIP GERLACH was elected treasurer.

JAMES G. MERRIMAN, president of the mill company, formerly known as the Oswego (N. Y.) Yarns Mill, Inc., which was recently taken over when the Dyersburg Cotton Products Corp. was formed, is now making his home in Dyersburg, Tenn.

FRANK B. WILLIAMS has succeeded EDWARD S. ADAMS as president of the Narrangansett Mills, Fall River, Mass.

J. W. CONE, president of the Revolution Cotton Mills, Greensboro, N. C., served as toastmaster at the "Father and Son" annual banquet held Dec. 5 in the Revolution schoolhouse.

JOHN BARNES, president of the Blood Knitting Co., Amsterdam, N. Y., has been named to the committee appointed by the board of trade in that city to make a study of national water power policies.

C. E. NEISLER, SR., president of Neisler Mills, Inc., King's Mountain, N. C., presided at a banquet and get-together meeting of the Business Men's Club last week. J. LEE ROBINSON, president of A. M. Smyre Mfg. Co., Gastonia, N. C., was among the speakers.

HORACE B. CHENEY, Cheney Bros., South Manchester, Conn., is at Washington urging quick Senatorial action on the proposed Vestal design copyright bill.

MATTHEW P. WHITTALL, president and treasurer of the M. J. Whittall Associates, Ltd., Worcester, Mass.; T. HOVEY GAGE, director of the Crompton & Knowles Loom Works, Worcester, and A. OTIS DAVIS, president and treasurer of the Davis & Brown Woolen Co., Uxbridge, Mass., have been elected directors of the Worcester County National Bank, Worcester and Fitchburg, Mass.

W. H. COOPER, formerly vice-president of Stephen Sanford & Sons, Amsterdam, N. Y., is passing the winter at Miami Beach, Fla.

J. WARREN VEDDER, vice-president and general manager of Rice, Barton & Fales, Inc., Worcester, Mass., is taking part in the golf tournaments at Pinehurst, N. C.

H. J. KING, president of King Bros., Laramie, Wyoming, and president of the State Farm Bureau, was among those most interested in the wool style show presented at the annual convention of the National Farm Bureau in Boston, Dec. 8 and 9. Mr. King expressed the belief that he might be looking at some of his own wool since he owns some 15,000 ewes. He came to the convention fresh from triumphs at the International Wool Exhibition where he set a record in walking off with the grand championship of the fleece show, in addition to winning first in the four classes of combings and the championship and reserve championship in the commercial group.

Henry P. Kendall, head of H. P. Kendall Co., Boston, who was last week re-elected president of the Taylor Society, a body devoted to problems of industrial management.

EXILIAS E. PAQUETTE, president of the firm of E. E. Paquette & Sons, hosiery manufacturers, Woodstock (Ont., Can.) and family, have left for Los Angeles, Cal., where they will spend the winter.

C. H. SCHENCK, formerly secretary of John K. Stewart & Sons, Amsterdam, N. Y., is a member of the executive committee named by the chamber of commerce to care for the unemployment situation at that place.

W. T. MORTON is president; J. H. FRANKS, vice-president; E. M. HORTON, secretary, and J. C. ABRAMS, JR., is treasurer of the recently formed Textile Club, composed of 70 employees of the Whitmire plant of the Aragon-Baldwin Cotton Mills, Inc., including superintendents, overseers, second hands, section men and slasher hands.

At the annual meeting of the Atlantic & Yadkin Railroad Co., JULIUS W. CONE, of Greensboro, N. C., president of the Revolution Cotton Mills and vice-president of the Proximity Mfg. Co., and J. C. WATKINS, of Greensboro, president of the Sanford Mills, were re-elected directors.

GEORGE D. HORST, of Nolde & Horst Co., Reading, Pa., hosiery manufacturers, has been appointed by Mayor Stump, chairman of the "job finding committee" of Reading and Berks Counties, to cope with the unemployment situation.

FELIX RAPP, spot cotton buyer for the Deutsch Americanische Baumwoll Import, Bremen, Germany, is on a trip through Louisiana and Texas, visiting the different large markets of those states.

GOVERNOR FRANKLIN D. ROOSEVELT, of New York, was the honor guest and only speaker at a dinner of the Overseers' Club of Callaway Mills, LaGrange, Ga., which was held at the Warm Springs (Ga.) Inn, Dec. 3. CASON J. CALLAWAY, president of the mills, presided at the dinner which was attended by approximately 175 overseers, superintendents and executives from mills at LaGrange, Hogansville and Manchester.

COL. H. G. HESTER, for the 61st consecutive time, has been re-elected secretary of the New Orleans Cotton Exchange, at the recent meeting of the board of directors.

At a meeting of the board of governors of the Wool Associates of the New York Cotton Exchange, Inc., held last week, the following were elected to membership: MAX W. STOEHR, president, of Botany Consolidated Mills, Inc., New York City; HERBERT K. WEBB, vice-president, of Chas. J. Webb Sons Co., Inc., Philadelphia, Pa.; and JOSEPH R. WALKER, of Walker & Co., Boston, Mass.

P. L. MCCREEDY, formerly with Catlin-Farish Co. and J. O. SNOW, formerly with Ridley Watts & Co. and American Wholesale Corp., have become associated with Bliss, Fabyan & Co., New York.

FREDERICK B. CLARK, of Ware, Mass., has been appointed treasurer of the Ware Valley Mfg. Co., of that town.

W. D. MAHONEY, general manager of the Faith Knitting Co., Averill Park, N. Y., was elected to the board of trustees of that village at the annual election.

H. CLEMENS, formerly of Reading, Pa., has been appointed superintendent of the full-fashioned hosiery department of the Allen-A Co., in Kenosha and Sheboygan, Wis.

CHARLES R. BATZER, superintendent of the Lancaster mill of the American Silk Mills, Inc., for the last three years, has been made general superintendent of the company's mills. The company is taking over another Lancaster mill, that formerly occupied by the Johnson Silk Co., and will give employment to 200 hands.

HENRY C. COLE, former production superintendent for the Felters Co., Millbury, Mass., has accepted a position in a Burlington, Vt., mill.

LEOPOLD S. LEE, plant superintendent of Bruck Silk Mills, Ltd., Cowansville (Que., Can.), has been elected to the board of

directors to replace A. G. YEOMAN, who retired from the directorate.

DAVID GESSNER, of the David Gessner Co., Worcester, Mass., and Mrs. Gessner sailed for Europe on the Bremen at midnight, Dec. 5. Mr. Gessner will combine business and pleasure on the trip.

HERBERT C. GATES, who resigned his position as superintendent of the Ware Valley Mfg. Co., Ware, Mass., last month, has accepted a place as general superintendent of the Lawrence Mfg. Co., Lowell, Mass. He is succeeded by JAMES F. NIELDS, JR., former superintendent and manager of the Birge Co., Bristol, Conn.

ALEXANDER FEDOTOV, who a few months ago spent some time in Atlanta and several other southern cities studying the textile industry and cotton production, has recently been reported condemned to 10 years imprisonment for his alleged activities in a revolutionary movement at Moscow, Russia. It is understood, that while in Atlanta he purchased for his government a number of cotton gins, and also gave a large order to an agent of an American farm implement manufacturing company for machinery used in the production of raw cotton. He was said to be well posted on textiles and cotton growing.

LINWOOD MORT, formerly of the Rockland Finishing Co., Garnerville, N. Y., is now superintendent of bleaching for Joseph Bancroft & Sons Co., Wilmington, Del.

E. T. PENDERGAST has resigned as superintendent of Granite Mill of the Uxbridge Worsted Co., Inc., Pascoag, R. I.

LOUIS H. TALCOTT, superintendent of the Pondicherry Woolen Mill at Bridgton, Me., for the last five years, has been transferred to the Farnsworth Co. mill, flannels, at Lisbon Center, Me. His successor at Bridgton is FRANK BARSTOW, of Pittsfield, Mass., who has been superintendent of the Tillotson Mfg. Co.

C. N. STEED, superintendent of the Highland Park Mfg. Co., Rock Hill, S. C., has announced his candidacy for city councilman in the primary to be held Dec. 30.

FRANK SCOON, formerly with the Crown Mills, Marcellus, N. Y., and Hanover (Ill.) Woolen Mfg. Co., has been appointed designer at plant of James J. Regan Mfg. Co., Rockville, Conn.

ALBERT WORRALL, formerly chemist for the Rockland Finishing Co., Garnerville, N. Y., has accepted a similar position with the Aspinook Co., Jewett City, Conn.

G. G. BUSY, formerly of Pelham, Ga., is now overseer of the cloth room of the Moultrie (Ga.) Cotton Mills.

WILLIAM BOULEY has been appointed overseer of weaving for the Edward Bloom Co., Putnam, Conn.

CHARLES FRALICK, formerly with the Oak Mfg. Co., East Point, Ga., is now in charge of carding for the Peerless Woolen Mills, Rossville, Ga.

H. T. GADDY, formerly of Moultrie, Ga., is now second hand in the picking department of the Griffin (Ga.) Mills.

P. C. GILLISPIE, formerly of Pelham, Ga., is now overseer of weaving at the Adams-Swirles Cotton Mills, Macon, Ga.

R. V. HAYES, formerly of the Mercury Mills, Charlotte, N. C., is now second hand in spinning at the No. 4 plant of the Chadwick-Hoskins Co., Charlotte, N. C.

R. L. MARONEY, formerly of Shelbyville, Tenn., is now overseer of the spinning department of the Morgan Cotton Mills of Georgia, Quitman, Ga.

J. E. MCCARVEY, formerly overseer of weaving at the Cochran (Ga.) Cotton Mills, now holds a similar position with the Saratoga-Victory Mills, Albertville, Ala. He is succeeded by J. H. CLARK.

JOHN H. MCDONALD, former overseer of dyeing for the George H. Gilbert Mfg. Co., Ware, Mass., has accepted a similar position at the Assabet Mills of the American Woolen Co., Maynard, Mass.

CHARLES F. MCGILL, overseer of finishing for the Security Mills, Inc., Newton, Mass., for the last five years, has severed his connection with that company.

JOHN LEIGHTON, formerly overseer of finishing with the Hayward Woolen Co., East Douglass, Mass., is now with the Bridgewater (Vt.) Woolen Co.

A. L. REMINGTON, overseer of dyeing, Crown Piece Dye Works, Woonsocket, R. I., has resigned after three years' service. He is succeeded by Edwin Davenport, Jr., of Shelton, Conn.

RAYMOND SAWYER, of Fort Plain, N. Y., has charge of knitting for the Dyersburg (Tenn.) Cotton Products Co.

J. H. THOMAS is now head of the carding department of the Boaz (Ala.) Mill & Gin Co.

PHILIP WHALEN, in charge of burling and sewing at the National & Providence Worsted Mills, Providence, R. I., has severed his connection with the company.

HARRY WRIGHT, who has been connected with the Barre Wool Combing Co., So. Barre, Mass., for more than 20 years in the combing department, has resigned.

JAMES M. YUILL retired Dec. 6 as overseer in the weaving department of the Amoskeag Mfg. Co., Manchester, N. H. Mr. Yuill entered the employ of the company about 35 years ago to learn the manufacturing end of the cotton textile business, and was promoted step by step to the position of overseer. He has always been active in the Amoskeag Textile Club.

Obituary

John H. Musgrove

John H. Musgrove, knitting industry pioneer and long an official in the textile industry, died Dec. 3 at his home in Pittsfield, Mass. He was 93 years old, having been born in Lynn, May 7, 1837. Mr. Musgrove entered the woolen industry at Bristol, N. H., where he was the first manufacturer of cardigan jackets named for Cardigan Mountain which overlooks the town of Bristol. He spent a period of years at Cohoes, N. Y., with the Root Mfg. Co. and then went to Pittsfield where he became superintendent of the D. M. Collins Woolen Mill. This was in 1882. This company was later merged with the W. E. Tillotson Mfg. Co. Still later the Savery-Noonan interests gained control of the company. Mr. Musgrove organized the Musgrove Knitting Co. when he was 62 years old. This company manufactured women's and children's cotton underwear. He was treasurer and general manager of this company at the age of 83. Mr. Musgrove maintained his interest in his work and attended the meetings of the board of directors of his company until July, 1929.

Thomas D. Douglass

Thomas D. Douglass, inventor of several loom appliances, died at his home in Auburn, Mass., on Nov. 27, aged 82 years. He was a foreman in a Worcester (Mass.) plant. He was a native of Almonte, Ont., Canada, and had been a resident of the United States for 60 years. He was a member of the Charter Association of American Inventors, and a 32d degree mason.

Max Mittendorf

Max Mittendorf, well known in textile manufacturing circles in this country and Germany, and vice-president of the Narrow Fabric Co., Wyomissing, Pa., died of a heart condition at his home in Wyomissing last week. Mr. Mittendorf, who was 60 years of age, was a native of Barmen, Germany. He had been with the Narrow Fabric Co. for 21 years. While in Germany he received a thorough training in textiles, especially in braids and other narrow weaves. He came to this country while still a young man. For some time he was in the employ of Sutro Bros., braid manufacturers, in Brooklyn. He was offered the superintendency of the Narrow Fabric Co. and accepted in 1909. He has been connected with the Narrow Fabric Co. ever since. He secured a financial interest in the firm and for a number of years, in addition to being superintendent, was a director, becoming vice-president in 1920. Mr. Mittendorf was active in civic affairs. He served for some time as secretary of the Board of Health of the borough, and was a member of the trustee board of St. Joseph's Hospital, and held membership in the Wyomissing, Berkshire and Iris Clubs, and the Lutheran Church. His widow and two daughters survive.

Walter L. Mulligan

Walter L. Mulligan, former president of the Indian Orchard Co., Indian Orchard, Mass., died in his home in Springfield, Mass., Nov. 18, after several years of ill health. He was a graduate of Cornell University and became chief executive of the Indian Orchard Co. through his service for the United Electric Light Co. of Springfield, which then controlled the Indian Orchard Co.

William H. Nunnally

William H. Nunnally, 74 years of age, a director of the Monroe Cotton Mills, vice-president of the Bank of Monroe, and president of the Monroe Oil & Fertilizer Co., died at his home in Monroe, Ga., of injuries sustained in a fall two years ago.

NEWS about MILLS

Cotton

Birmingham, Ala. Alabama Mills Co., operating a large number of mills in this state, resumed a full-time operating schedule Dec. 2, at all mills. These plants are located here, at Aliceville, Clanton, Dadeville, Decatur, Fayette, Greenville, Haleyville, Jasper, Russellville, Speigner, Wetumpka and Winfield.

Goodyear-Clearwater Mill, Cedartown, Ga., is arranging for resumption of production at its local No. 1 mill, on a full-time schedule, to be continued for an indefinite period. The No. 2 mill at Rockmart, Ga., will also advance to a like basis.

Southern-Brighton Mills, Shannon, Ga., woven tire fabrics, are operating on a five-day per week schedule.

Bristol Mfg. Corp., New Bedford, Mass., is extending its operations, and as a result of additional orders that have been booked by the corporation, the plant has added 100 more workers this week, to be employed indefinitely, according to an announcement made by Frank S. Wilcox, president of the company.

New Bedford, Mass. The three large tire fabric plants of this city have increased operations during the last few weeks. **Devon Mills** of the **Goodyear Tire & Rubber Co.** are to continue on the basis of three shifts, while at the **Fisk** plant the receipt of new orders has made it possible for the plant to continue operations instead of closing down, as was announced some weeks ago; the output is from 40 to 50% of normal. At the **Firestone** plant, three shifts are being operated, two of six hours each during the day, and the regular night shift, employing about 1,400.

Amoskeag Mfg. Co., Manchester, N. H. Over 8,000 operatives at this mill have inaugurated a weekly contribution of 10c. each to aid unemployed fellow workers, the company contributing dollar for dollar of the sum raised.

Exeter (N. H.) Mfg. Co., recently completely modernized, is installing mercerizing machinery at a cost of $50,000, to carry on a new process.

Catawba Cotton Mills, located near Newton, N. C., after being idle for some time, will at once resume full daytime operations, according to J. W. Yount, president. The dye plant owned and leased by the Catawba Cotton Mills has been in full day operation for several months, and has recently been running on both a night and day schedule.

Linford Mills, Inc., Belmont, N. C., have had their oil spraying system revamped with a new high-pressure unit, which is of the hopper high-pressure-spraying type. This equipment was furnished by Borne Scrymser Co. of New York.

***Roxboro, N. C.** James M. Craig, of Philadelphia, Pa., recently visited the plant of the **Somerset Mills** here, and is making plans for expansion. This company manufactures Turkish towels, novelties, etc. In all probability the plant here and the one in Philadelphia will be combined, the northern plant being moved to Roxboro.

Delgado Cotton Mills, Wilmington, N. C., will be sold to the Seaboard Public Service Co., New York, N. Y., if the recommendations of the mill's receivers are carried out.

***Forestdale Mfg. Co.,** North Smithfield, R. I. This mill has been purchased from the Laramee Trucking Co., Woonsocket, R. I., which recently secured the property at public auction, by Thomas Harris, Providence, R. I., and associates, who propose to organize a company and reopen the plant in the near future. Mr. Harris was formerly superintendent of a textile mill at Woonsocket.

Greenville, S. C. Judson Mills recently began the installation of 400 looms, the work continuing until early in the new year. **Camperdown Co.** replaced 130 looms with newer machines. The **Monarch Mills** plant at Lockhart is also replacing the greater part of its looms, according to information obtained from local mill supply men. Other mills in this section are said to be considering the purchase of large quantities of machinery.

Granby (Que., Can.) Esmond Mills, Ltd., with a capitalization of 1,000 no-par-value shares have been incorporated by the Dominion Government. The company which is to be the Canadian branch of **Esmond (R. I.) Mills, Inc.,** will establish a small mill at Granby for the manufacture of a few standard lines of fancy cotton blankets. This will be the forerunner of a much larger plant when its Canadian business warrants.

Wool

Waterman Worsted Co., Putnam, Conn., recent purchaser of the **Devonshire Mills,** Goff's Falls, N. H., is said to be arranging to begin operations at the latter plant on or before Jan. 1, giving employment to an initial quota of about 150 workers.

***Georges River Woolen Mills,** Warren, Me., after several months of idleness for the first time in more than half a century, has been newly reorganized and will resume operations immediately. Certificate of incorporation has been filed in the Knox Registry of Deeds at Rockland. The amount of capital stock is 500 shares of preferred and 500 shares of common, with $50,000 already paid in. The new officers are: President, George W. Walker, Warren; treasurer, Louis B. King, Boston; clerk, William Allen, Lisbon Center. Treasurer King is a member of the Boston firm of Friedman, Atherton, King & Turner and owns a large majority of the stock in the new corporation. The company has a three years' lease on the mill and machinery and will employ about 150 persons at first.

Assabet Mills of the **American Woolen Co.,** Maynard, Mass., which have been shut down for several weeks are expected to start up again in the near future when a wage cut will become effective.

John B. Davidson Woolen Mills, Eaton Rapids, Mich., are planning rebuilding of picker house at mill, recently destroyed by fire with loss reported over $40,000, including equipment and stock.

Folwell Bro. & Co., Philadelphia, Pa., have adopted a full-time production schedule at their mill for the first time in several years, giving employment to a working force of about 600 persons. It is expected to hold to the present basis for an indefinite period.

Intermountain Worsted Co., Nephi, Utah, has secured a local site and is reported planning early construction of a new mill, about 180x600 ft., with a scouring unit adjoining with rating of 45,000 lb. daily, as well as warehouse structure of large capacity. Entire project is reported to cost over $150,000, with equipment.

Montreal (Que., Can.). F. Downes, textile manufacturer of Yorkshire, England, was a recent visitor in Montreal. While in Canada, Mr. Downes, has been looking for a site for a large textile plant which he intends erecting in the Dominion. The company plans to erect a $500,000 plant in some Canadian city.

Knit

Graham Knitting Co., Los Angeles, Calif., established about 15 years ago, has been reorganized as a corporation with Virginia Lee Dorn as president; Walter E. Dorn, vice-president; Louise Easley, second vice-president, and Elmer R. Easley, secretary-treasurer. The company manufactures sports dresses for women and sweaters. The plant is at 8660 Graham Ave., and a retail shop is maintained at 542 South Broadway.

Montezuma (Ga.) Knitting Mills, which have been closed for four months, have resumed a full-time operating schedule, with 80 operatives given work manufacturing boys' and misses' knit

*Indicates previous mention of project.

union suits, operating 35 knitting machines.

Stern Knitting Mills, Peoria, Ill., have been purchased by the **Eagle Knitting Mills,** Milwaukee, Wis., as announced by David Karger, co-partner of the Eagle concern. Equipment and machinery of the Stern Mills is being moved to Milwaukee. "The 1930 sales of the Eagle Knitting Mills are ahead of 1929 despite generally adverse conditions," Mr. Karger said. Two years ago the Eagle firm built a large modern plant containing more than 70,000 sq.ft. of floor space on South Second St. Stern Knitting Mills have been operating in Peoria for 11 years.

Kingston Knitting Co., Cambridge, Mass., has been chartered with a capital of $25,000, to take over and succeed to company of same name with local mill on Carlton St. Fred J. Johnston is president of the new organization, and Stanley Young, treasurer.

Propper-McCallum Hosiery Co., Inc., Florence, Mass., closed down its mills on Dec. 6, for a period of one month, in accordance with the curtailment program advocated by the National Association of Hosiery and Underwear Manufacturers.

Middlesex Hosiery Mills, Lowell, Mass., have been chartered. The capital is 10,000 shares no par stock. The incorporators are Howard E. Page, William B. Bartlett and Henry L. Harding.

Globe Knitting Works, Grand Rapids, Mich., are running on a basis of about 80% of capacity, as compared with 65% during the summer months.

***Gotham Silk Hosiery Co.,** New York, has closed down its mills at Dover and Wharton, N. J., for a temporary curtailment, releasing about 800 persons. The Wharton mill is scheduled to resume about Dec. 22 and the Dover plant about Jan. 5.

Keystone Finishing Mills, of Burlington, N. C., will move their plant and equipment to Asheboro at an early date, it is announced. A building has been secured and a number of people connected with the plant have already rented homes in Asheboro.

Denver, Pa. Damages by a severe storm here recently to the plant of the **Blue Line Hosiery Mills, Inc.,** are being repaired and the mills will soon be operating normally. The improvements include a 5-ft. diameter stack 110 ft. in height.

Onyx Knitting Mills, Philadelphia, Pa., manufacturers of bathing suits and sweaters, announce the removal of their plant to 25th & Reed Sts., from 1421 Wallace St. The company is now located in the six-story building formerly occupied by S. B. & B. W. Fleisher Co.

Reading, Pa. Charles A. Stevens and Solomon F. Ulrich, of the **Nu-Craft Hosiery Mills, Inc.,** Mohnton, Pa., have bought for $45,000 the old **Charles Steiner Silk Mill,** 940 Spruce St., this city, closed for six months, and will install hosiery finishing machinery at once. It is expected to get it into operation in a few weeks, and to make the plant the finishing and distributing point for the company's six mills, turning out $4,000,000 worth of hosiery each year. A dye house will be erected next spring. The plant will employ about 200 people.

Milwaukee (Wis.) Hosiery Co. has purchased the David Adler & Sons Co. plant at Fourth and Locust Sts., according to Joseph H. Zens, president of the hosiery firm. Installation of a heating system and new machinery will be made at a cost of about $50,000. The hosiery concern will move into the new location about Jan. 1, Mr. Zens said.

Milwaukee, Wis. At present 5,400 workers are being employed full time by the **Phoenix** and **Holeproof Hosiery** companies, it was announced last week. The two plants will close for a brief period after Christmas to take inventories.

Stanfield's, Ltd., Truro (N. S., Can.), will be sold at the end of the present month or early in 1931, as the shareholders have approved the negotiations recommended by the directors, and which will be carried out by the Arcadia Trust Co., of Halifax, N. S. To carry on the business a new company will be organized, a move which has been made necessary since Hon. Frank Stanfield was made Lieut.-Governor of the province.

Silk

Haskell Silk Co., Westbrook, Me., has shut down for an indefinite period and the outlook is said to be for a long period of inactivity. There has been a gradual curtailment of its product since Nov. 1, due to a surplus of stock on hand, which has resulted in the laying off of nearly 150 employees.

National Spun Silk Co., Inc., New Bedford, Mass., where additional workers have been employed during the last few weeks, is expected to be operating at full capacity early in the new year, with a working force of 1,200 to 1,300, an increase of approximately 70% over the number now employed.

***Kutztown (Pa.) Silk Co.** is the name of the new company which will operate the former local broad silk mill of the **Amalgamated Silk Corp.,** recently acquired. Production is scheduled to begin before the close of this month. Herman Zeitsch is president; George F. Robbins, vice-president; and Harold Mumma, secretary and treasurer, all of Allentown, Pa.

Newlands & Co., Ltd., Galt, (Ont., Can.), have completed the construction of the one-story addition to the textile mill. The addition will be used to house machinery for the manufacture of fine botany yarns used chiefly by carpet manufacturers and knitters who heretofore have had to import them from England.

Riverside Silk Mills, Ltd., Galt (Ont., Can.), makers of silk fabrics and silk yarns for hosiery, have opened two new warehouses. The one warehouse was opened in Montreal in the Mayor Building, and will be under the management of P. M. LeMaistre. The other warehouse is located in Toronto, in the Balfour Building, on Spadina Ave., and will be in charge of Philip Hamm.

Narrow Fabric Weaving & Dyeing, Ltd., Galt (Ont., Can.), has purchased a lot adjoining its plant and will erect a weaving shed, 60x70 ft. in dimensions. The building will be of brick and one story in height.

Toronto (Ont.), Can.—A new mill announced in Granby, Quebec, the Carl St. John Co., manufacturer of real silk, which has been located in the Quebec town for the last two years, will break ground next week for a mill three times the size of its present plant.

Rayon

Celanese Corp. of America, Inc., Amcelle, Md., has begun production in new units at its local mills, recently completed, giving employment to about 700 additional workers. The company has received assurance from Cumberland city officials that desired water supply will be available; the city has authorized the construction of a dam, 68 ft. high, in vicinity of Evitt's Creek dam, estimated to cost $500,000, to increase water facilities.

Finishing

Lowell, Mass. The $200,000 worth of machinery in the **Lowell bleachery** plant of the **National Fabric & Finishing Co.,** which was sold at auction last week, netted approximately $75,000, according to information secured from the Boston office of Samuel T. Freeman & Co., auctioneers.

Trent Dyeing Corp., Paterson, N. J., recently organized with capital of 1,250 shares of stock, no par value, to operate a local dyeing and finishing mill, will be represented by Surosky & Surosky, 45 Church St., Paterson, attorneys. The incorporators include Saverio Spagnuolo and John Battista, Paterson.

Clyde Print Works, West Warwick, R. I., in a foreclosure sale Dec. 1 was sold to Herman Geller, Paterson, N. J., for $113,000. Unencumbered machinery was bought by the same party for $13,000. Mr. Geller plans to operate as soon as possible and has offered to settle back wages of $16,000 for half that amount. This move is entirely voluntary.

***Piedmont Print Works, Inc.,** Taylors, S. C., have installed the first of five additional print machines shipped from Garnerville, N. Y., and the remainder will be in place before the first of next year, according to Harry R. Stephenson, president. This additional equipment will double the capacity of the output but will not increase the working force, officials state.

Ray-Ser Dyeing Co., Chattanooga, Tenn., has installed additional winding machinery, which has increased the capacity by 75%. The plant has been operating night and day for the last eight weeks and is now supplying dyed and twisted rayons, as well as combination yarns.

American Printing Co., Kingsport, Tenn., is running on a full day and night capacity schedule at its local print works, and will hold to this schedule for some weeks to come. The weaving mill is inactive at the present time.

*Indicates previous mention of project.

Questions and Answers

We undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD. We do not undertake, however, routine analysis of yarn or fabric, or investigation involving unusual expense.

Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as evidence of good faith.

Letters expressing opinions or voicing criticism are cordially invited. These will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.—EDITOR.

Fuzziness in Silk Hosiery

Technical Editor:

I have read with considerable interest the contribution on fuzziness in silk hosiery in the September 13, 1930, issue of TEXTILE WORLD. I appreciate the amount of helpful information and the desire shown by the author to prove his assumption by giving clear illustrations, and I find myself in agreement with a large part of his deduction; but my experience does not sustain the finding of the hosiery manufacturer as to the fuzzy effect caused by silk soaked with soap and oil.

Because the article and illustrations were offered as evidence that soap and oil caused fuzziness, I am now prompted to give the readers my version of the illustrations, and the benefit of quite an extensive experience with fuzziness, to show that more positive evidence is necessary to prove that a proper amount of soap and oil is harmful in soaking silk.

My analysis of the illustrations is as follows: Fig. 3, thread 2, counting from the top, shows a broken fiber; comparing it with the size of what appears to be a single thread on threads 8, 9, and 10, the size indicates a cocoon filament. On the raw silk this filament may have been: (1) a large loop, which caught and broke, leaving a split fiber; (2) a brittle cocoon fiber, which broke when the tension was applied to the thread; or (3) the end of a bad cast that opened in the soaking. Threads 1, 3, 4, and 5 are evenly doubled and compact. Threads 7, 9, and 10 are spiral, with one thread winding around the others. This spiral is usually classed as loopy tram, and possibly is caused by uneven doubling, sometimes due to a loosely wound winder bobbin.

My experience is that in knitting a thread with a loose fiber, like thread 2, if the broken part passes in first, it sometimes breaks off when it goes over the wick, or brushes up into a nest of fibers and is knit into the stocking, appearing there like a nib. If the unbroken part passes through the wick first, the fiber often brushes down loosely and appears as a slightly clouded streak in the stocking, or the fiber parts away from the thread and appears as a loop somewhat like that shown in the center of Fig. 4.

In knitting a spiral thread, if one thread is slack when the thread passes over the wick on the knitting machine, it brushes the slackness along until it forms a loop of a size depending on the twist and extent of the slackness. Such a loop may catch, break, and brush up at the carrier tube into a bunch of fibers and break the thread; or it may brush up the one thread for 4 or 5 in. and leave a fine part with a nest of threads in one or both ends of the fine part.

If the loop goes through to the needle, one part may get on the outside of the needle beard, and the other on the inside of the needle, and break when the stitch is formed. In that case there will be a short, loose end sticking out on the fabric similar to those shown in Figs. 1 and 2.

The trouble from loopy tram is found mostly when one thread of a multiple yarn is tight and the others are loose; since the strain is all on the single thread, it frequently breaks. The defect appearing in the stocking is a short fine thread, a loop, or a short end sticking out from the fabric.

Therefore, I agree with Mr. Roberts that the spiral and split threads in Fig. 3 will cause fuzziness if there are enough of them; but I do not agree that they are formed by breaking in bending, as a thread with only 15 to 18% of moisture is quite pliable and elongates 25 to 50% more than a thread that is dry.

Fig. 4 is given to show broken filaments due to the silk being soaked with soap and oil. Before studying the defects shown, we should consider the effect of 20% of soap in a boiling hot liquor on raw silk. Hot soap liquor will completely strip the gum from the thread in about 30 min., leaving the fibroin soft, elastic, and of 100% strength.

Hosiery tram, knit ingrain or in the boiled-off or dyed state, has no gum to protect the thread, yet the most perfect hosiery is knit from first-class silk on the same type of machine as is gum silk.

Soap, therefore, does not harm the real fiber, or fibroin, or cause it to become fuzzy if the silk has been properly reeled from perfect cocoons. A raw silk showing a low neatness test will be very fuzzy in the boiled-off or dyed state, and the different degree of fuzziness in the stocking will be largely governed by the color, since the darker shades intensify it.

Raw silk soaked overnight with 20% of soap only, at about 80° F. will not strip the gum over 1%. It will break down the cohesion about 90%, and will make the gum softer and very hygroscopic or absorbent. It will weaken the sericin, since there can be no softening of the sericin without a weakening effect. It will, however, have no weakening effect on the fibroin. It will not cause the thread to become fuzzy if the thread is not spiral or loopy, and the cocoon filaments are not tender. The softening of the sericin will cause more loops to show in the gum state; but the soap does not cause the loops; and they therefore cannot and will not be more pronounced, all other conditions being equal, after the sericin is boiled off on soap-soaked silk than on soluble-oil-soaked silk.

This comparison is made to show that the use of soap sometimes causes more loops to show on gum silk; but often on the finished stocking one will find quite another appearance after the sericin is removed.

The writer finds it impossible to determine from a small sample the soaking effect on any silk as far as it applies to fuzziness, as

some silks have millions of small specks, loops, nibs, and other defects to a pound that open up and give a fuzzy effect when boiled off, while other silks have less than a thousand. The condition is not uniform throughout the medium-grade lots, and therefore a large sample is necessary to get the run of the bales.

My procedure to determine the effect of different methods of soaking would be to take one bale of silk and divide it into two lots, soak one with soap and oil and the other with soluble oil, and knit each lot separately into hosiery. Dye, finish, and then inspect the stockings for fuzziness in the finished state.

To build fuzziness standards use the neatness standards as a guide, pick over the stockings, and make fuzziness standards. Then proceed and match up both lots with fuzziness patterns. ANALYST.

◆

Oil-Proofing Cotton Sheeting

Technical Editor:

We are very much interested in a formula for either coating or impregnating cotton sheeting to make it oil-proof. If you know of such a formula, we shall appreciate receiving this information through your questions and answers column. (7380)

It is rather difficult to give a comprehensive answer to this inquiry since you do not state what kind of oil the sheeting should be resistant to, or what the fabric should be like after it is finished.

Coatings of rubber are more or less oil-proof, provided the oil does not stay on the fabric any great length of time. If the oil is only spattered on the goods and wiped off in time, rubber might be considered a good oil-proofing medium, but it will not stand up under constant exposure to oil, because rubber is somewhat soluble in oil.

If a stiff, paper-like, non-flexible fabric is not objectionable after the goods have been rendered oil proof, a synthetic resin, such as Bakelite can be used. This would be exceedingly oil-proof, but the fabric would be only slightly more flexible than a thin sheet of metal. A Bakelite-impregnated fabric might be suitable, for example, to make oil-proof packings or an oil-proof covering that could be used on a rigid object.

A somewhat more flexible oil-proof coating could be applied to cotton sheeting by treating it with a varnish and baking the varnish. This type of filling is applied to cotton sheeting to make a form of electrical insulation. It can be classed as a semi-flexible coating.

If a black color on the finished sheeting is not objectionable, an oil-proof coating can be made by melting a mixture of equal parts raw castor oil, Carnauba wax, stearine pitch, and neutral degras. This can be applied to the fabric in a hot condition. When the coating has had a chance to cool and set, the fabric is passed through heavy squeeze rolls. This finish is very oil repellent and leaves the cloth somewhat pliable.

If a lighter-colored coating of the semi-flexible type is desired, the goods can be treated with a boiled linseed oil to which has been added a small amount of dryer. This coating can be dried in the air, or to hasten drying, in a drying oven. If the texture of the sheeting is not very close, the goods may require several coats of this oil treatment. The oil treatment would take longer to apply than the others, as it would take longer for the oil to dry and shed other oils. We do not think of any oil-proofing treatment which will permit the goods to retain their natural feel and handle.

THOUSANDS of inquiries are handled annually by the Technical Editors. In order that as many readers as possible may benefit from this service, we select problems of general interest for publication each week.

◆

Weighing and Conditioning Worsted Yarn, and Eliminating Beard

Technical Editor:

What kind of a scale is preferred for weighing worsted yarn? We have four or five kinds in the mill and all of them seem to get out of order very quickly.

Can you recommend any kind of atomizer which will apply a certain weight of moisture on yarn? In other words, do you know anything which could put on 2, 3, or 4 lb. of moisture, as the case may be?

Can you tell us any way of laying the whiskers on single yarn? We have tried winding it with paraffin, and it makes no difference. (7332)

The scale to use depends upon the system in use at the mill. The majority of mills allow the section hand to weigh the yarn and determine his own change gears accordingly. A check is kept upon his work by requiring him to send four bobbins, from each lot and count running, to the office, where the bobbins are checked and carefully weighed.

For such a system many favor the use of yarn beams, because these scales relieve the operative of handling small weights, determining the grain weight, and calculating the actual count. The count is denoted by the actual position to which the beam is moved by the suspended skein. One person should be hold responsible for the calibration of these scales, and this work should be done at least once a week.

The scales in the office should be of the balance type, using grain weights. The scales should be protected from air currents and dust, and should be provided with a spirit level. It should be possible to weigh to a tenth of a grain. Using such scales, one person should do all the weighing.

Many mills will not allow the section hands to weigh their own yarn, especially those mills producing 100% sales yarn. They have a testing room where it is possible to maintain desired atmospheric conditions as regards humidity and temperature. All yarn weighed is first conditioned, then weighed, and the required draft gear is calculated. This system reduces errors due to the human equation and should always

give a correct count. Naturally, scales using grain weights are practically standard in such mills.

Our experience has been that no mill seems to believe it important to give the section hands sufficient instructions regarding the necessity of careful reeling with correct tensions and speeds, and the importance of using the delicate yarn-weighing scales gently.

The method generally preferred for conditioning sales yarn is not by direct application of moisture or storage for a time in a cool, moist atmosphere; but by doing the winding and spooling in a room where the relative humidity is under automatic control. Some mills will not purchase yarn for weaving if they know that a water roll has been used at the jack spooler. High relative humidity, 70% to 75%, makes it possible to obtain 12% moisture content in the yarn. The yarn absorbs the moisture naturally, and not in the form of free moisture, so that uniform content is assured. I fall yarn to be spooled is stored in the same room, it will be subject to the conditioning influences.

For the direct application of moisture to yarn on bobbins, cones, or tubes, it is possible to purchase a conditioning machine especially designed for this purpose. Such machines are usually equipped with several spray heads or humidifiers. Often the machine is designed to eject steam under controlled pressure into a special chamber. Yarn travels on an apron at any reasonable speed.

In such machines it is possible to apply a large percentage of moisture. Initially it is free moisture on the outside of the bobbin, but it is gradually absorbed by the yarn on the inside. Usually yarn conditioned and allowed to stand over night is ready for use the next day. Some mills have a spray head spraying water directly on the bobbins as they pass down the sorting hopper. Another new method consists of winding the yarn on perforated cones or tubes and forcing moisture into the yarn from inside the package by means of compressed air. The majority of mills, however, steam their filling yarns to set them.

There is only one effective remedy for excessive beard on worsted yarn after it is spun. It must be singed ("genapped").

If the yarns are cap-spun, the balloon should be cut down to a minimum if the spin permits. It is desirable to use bell-mouthed caps, hexagonal follower on the short-swing lever of the scaife motion, and a long pick. All these will help, but a reduction in spindle—or rather, bobbin—speed would cause the greatest reduction in the beard. It might also prove effective to get the twist into the nip of the roll, but without moving the flyboard out to obtain this effect.

You might experiment with a trough and submersion roll on your winders, using a gum solution. Such solutions are sometimes applied to worsted warps by means of the sizing machine.

◆

Full-Fashioned Leg Differs from Foot in Shade

Technical Editor:

We are enclosing herewith two full-fashioned stockings knit from six-thread special XX pure silk. The stockings are marked A and B.

You will notice in A a knot in the leg, where the silk cone was changed, dyed a different shade. In sample marked B you will notice the same condition existing between the leg and foot; i.e., two different shades.

We are experiencing considerable trouble with different shades between leg and foot, and it is our opinion that this condition may be caused by oxidation taking place in the legs which are sometimes kept around a considerable time before being footed. On the other hand, it would appear that this may be caused by the difference in the silk as shown in A. (7359)

It is quite true that legs which have lain around a length of time will oxidize unless considerable care is taken in the selection of knitting oils. There are oils on the market which are guaranteed against oxidation no matter how long the stockings are kept. Of course, if stock is to be kept for a time, steel racks should be used and kept closed from light.

Another common cause is tinted silk. See that the tint is kept the same shade and that the same shade is used in the foot that was used in the leg.

Again, the shade of silk will vary in the different lots which come in, and the silk man should be instructed to send the silk from one lot until it is exhausted and not to send broken lots or silk from any lot, regardless of whether it is the lot he is shipping you or not.

Possibly your legger is oil-soaking the legs and the footer is clean; or the leg may be clean and the footer may "splash" the first course to prevent needle breakage.

◆

Ravel Backs in Second-Time Spinning

Technical Editor:

Your reply to our inquiry about knot tying in the second-time spinning of grenadine twist is most sincerely appreciated, and we have adopted the instructions suggested. Here's another one.

We find numerous ravel-backs or worms in the smaller numbers of our second-time spinning at the knot catchers or washboard tensions on the corners. These are very troublesome; and if one slips through, it looks like a defect in spinning. Is this caused by the treating of silk, causing the strand to become brittle and break at weak places? We are using 18 pints of oil with 32 oz. neutralizing powder to every 100 lb. of silk with an overnight soaking. In the morning the skeins are put in an extractor, whizzed until they contain about 20% moisture, and given to the winders to be spooled. We carry about 68% humidity in the rooms. (7381)

Ravel-backs or worms are also called caterpillars. Ravel-backs is an expressive term and we shall use it.

Ravel-backs are the result of one or more threads of a multiple-thread yarn breaking, and the loose end raveling back when it strikes any obstruction, such as a knot catcher or cleaner, washboard tension, or cut guide. They are caused by the following conditions: (1) Brittle threads, due to over enlongation in reeling the wet thread from cocoon; (2) weak and very fine threads; (3) cut guides, washboard tension, and cleaners catching a defect on single thread, causing it to break and ravel back; (4) loopy tram, when one thread is tight and the others slack and wound in a spiral form around the tight one; since the single thread cannot support the tension, it breaks and causes a loose end; and (5) cut flyers or travelers in twisting; rough or broken rings on 5 Bs.

Your soaking formula will not cause ravel-backs.

New Machinery & Processes

Wear Test on Carpets

ANNOUNCEMENT of a machine and test for determining the comparative wearing qualities of carpets has been made by the United States Testing Co., Inc., 316 Hudson St., New York. The machine has resulted from a large amount of research conducted by this company to devise methods for finding the wearing qualities of various fabrics. Due to the fact that the pounding and scuffing action to which a floor covering is subjected differs greatly from the rubbing action which causes wear on clothing fabrics, it was found necessary to design a type of machine for testing carpets which is entirely different from the one developed for duplicating the straight friction wear to which suitings, overcoatings, sheetings, denims, and similar fabrics are exposed. In the design of the carpet-testing machine, helpful ideas and suggestions were obtained from William Wahrenberg, Jr.

The majority of carpet fabrics have a flexible surface composed of thousands of tufts of yarn produced by the cutting or shearing off of the pile loops. It is the surface of the carpet composed of these tufts which must withstand the pounding and scuffing actions produced in walking. The backing of carpets should be so constructed that the pile yarns are held firmly and sufficient body is imparted to the carpet to cause it to lay flat and to withstand the roughness or cracks in the floor which it is to cover. If this last-mentioned feature is satisfactory, the resistance of the pile surface to foot abrasion determines the wearing quality of the carpet.

The first question to be considered is the action of the pile yarn when pressure is exerted, such as would occur when stepping on a carpet. In other words: To what extent does the pile yarn flatten out and how deep down into the pile does wear occur? To arrive at practical average figures for different heights and types of pile would be impossible, due to the great variances in pounds per square inch exerted upon carpets depending upon the weights of the individuals walking on the carpets and the surface area covered by different sizes of shoes.

For comparative tests, all carpets are worn down to a depth determined by the exertion of 30 lb. pressure on 1 sq.in. of carpet. The device shown in Fig. 1 is used to determine the setting of the machine. Pressure applied by means of a weight at one end exerts a dead pressure of 30 lb. on the 1-in. square surface, acting 3 in. from the fulcrum at the other end. The depression in the carpet due to this pressure is read on the scale at the right, which gives the setting of the machine. In other words, if the scale shows a $\frac{1}{4}$-in. depression in the surface pile, the machine is set so that it will act only down to a depth of $\frac{1}{4}$ in. from the surface.

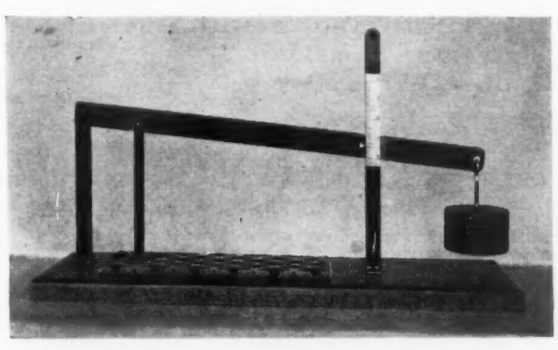


Fig. 1. Device for determination of setting of carpet testing machine

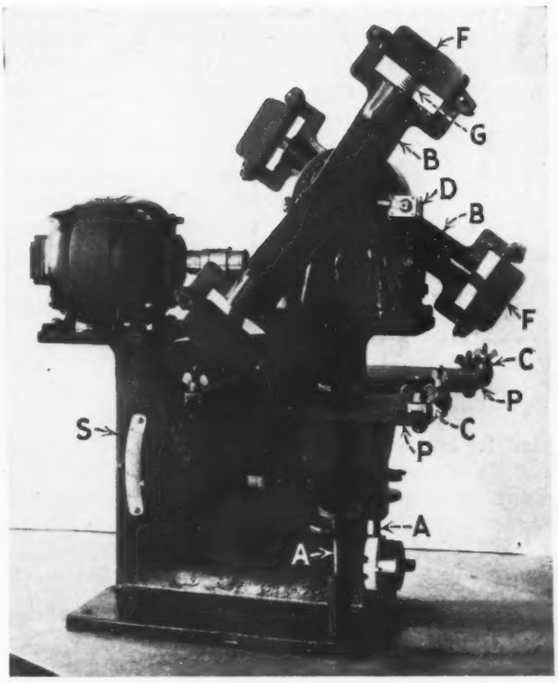


Fig. 2. Side view of machine for determining comparative wearing qualities of carpets

Fig. 2 is a side view of the carpet-wearing machine, showing the scale *S* at the left. The platforms, on which the samples of carpet to be tested are secured by means of clamps *C* are raised or lowered by means of adjusting screws *A* until the pointer is brought to the same point on the scale as determined by the apparatus shown in Fig. 1.

Pounding and wearing produced by walking may be said to be duplicated by the heels *F*, which are movable and held in place by the springs *G*. A piece of fine emery cloth (not shown in the illustration) is attached to the back of the heels *F* and allowed to drag along behind. The emery cloth dragging loose behind is to compensate for the scuffing action in walking, while at the same time it carries away loose lint and expedites the test. The arms *B*, of which the heels *F* are a part, revolve, bringing these heels in contact with the pile of the carpets attached to the platforms *P*. The number of revolutions necessary to wear the samples down to a depth indicated on the scale *S* is recorded on the automatic counter *D*. The arms which bring the heels in

contact with the carpets, giving a pounding and wearing or scuffing action, are driven by an electric motor through a reducing gear box. A front view of the machine is shown in Fig. 3 with the samples of carpet clamped to the platforms ready for test.

To compare the wearing qualities of, say, two samples of carpet, the procedure of the United States Testing Company, Inc., is as follows: The setting of the machine for each sample is determined by the device shown in Fig. 1 and then two specimens of each sample are subjected to the wearing action of the machine until they are worn to a degree that is considered unfit for further practical use. Two specimens of each sample are tested as a check to obtain accurate and comparable results. The sample withstanding the greater number of revolutions or strokes of the machine is said to have the better wearing qualities. The company reports that six samples of carpets were submitted by a reliable and well-known carpet manufacturer to its laboratory for comparative wear tests. The samples were unmarked and the testing company's technicians had no knowledge of the quality or price value.

Upon completion of the tests, the machine results were checked by the mill laboratory expert in reference to the actual index values known by the mill. Table I shows the results obtained by the United States Testing Co., as compared to actual mill figures. Two of these samples, after having been tested for wearing qualities, are shown in Fig. 4. It will be seen that on all samples the machine results check with the practical mill index values, showing that the carpet wear-test machine gives valuable comparative results.

Gear Lubricants

DEVELOPMENT of a new series of gear lubricants for all types of heavy, slow-moving, open gears is announced by E. F. Houghton & Co., Philadelphia. These lubricants are known as Tenac Nos. 1, 2, 3, and 4.

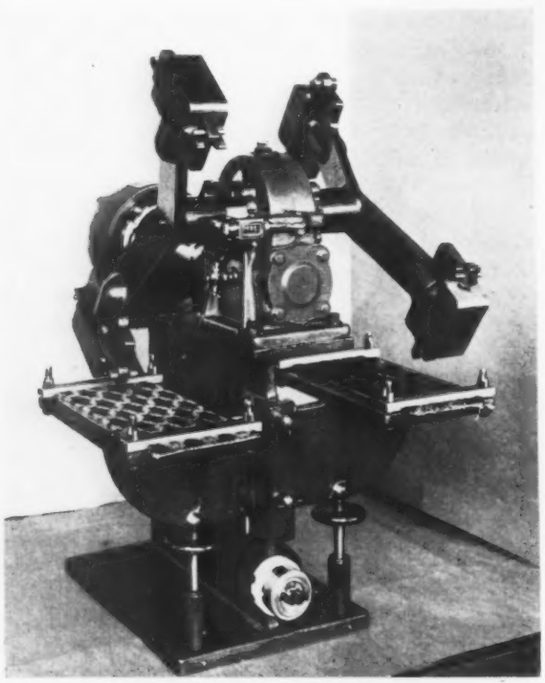


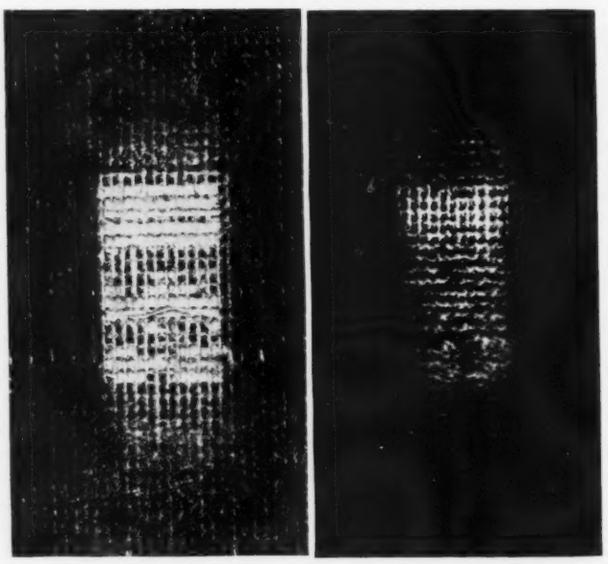
Fig. 3. Front view of carpet-wearing machine with samples of carpet clamped to platforms

Table I. Comparative Wearing Qualities of Carpets

Sample	Revolutions (Double Strokes)	Actual Mill Index Values
1	700	10
2	1,300	17
3	1,400	20
4	1,850	27
5	3,200	29
6	18,700	47

An important advantage claimed for these lubricants is that they are not thrown off the gears while they are in motion. The research staff of E. F. Houghton & Co. states that Tenac has been tried in practically every type of gear installation and under most adverse conditions, and in every case has met all requirements successfully.

Another of the outstanding features of this lubricant is its extremely low cold test. This is especially important when low atmospheric temperatures are encountered. No special device or method of application is required for



700 revolutions 1,300 revolutions

Fig. 4. Samples of carpets showing results of wearing tests

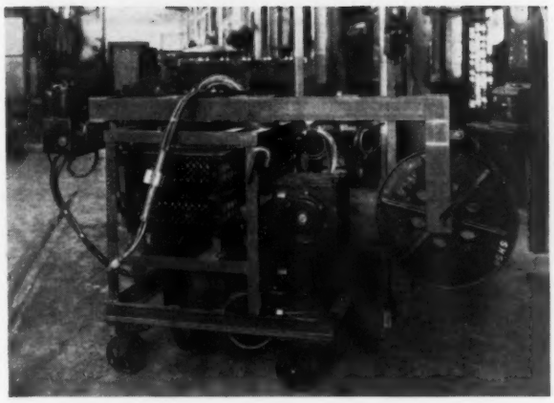
the use of the Tenac series of gear lubricants. They are applied to the gears in the same manner as other lubricants used for the same purpose.

Of the four different grades of Tenac, No. 1 is the heaviest of the series, while No. 4 is the lightest.

Semi-Automatic Welder Adaptable for Shielded Arc

PORTABLE, semi-automatic arc-welding equipment of an improved type has been announced by General Electric Co., Schenectady, N. Y. The welder can be used for either open or shielded arc welding, and a simple adjustment, requiring but a few minutes, is all that is necessary to make the conversion.

The equipment consists of a welding head for feeding the electrode, an enclosed line contactor with interlock, a field rheostat for controlling the motor on the welding head, and a welding tool and lead for directing the electrode toward the work. The welding head is a motor-



Portable semi-automatic arc-welding set

driven wire-feeding device to supply electrode wire continuously to the arc. The wire is drawn from a reel by means of a pair of geared feed rollers propelled through a train of gears by an adjustable-speed, 60-volt, d-c. motor. The head is equipped with a gear shift for obtaining approximately the required rate of wire speed, the final adjustment being made by means of the motor field rheostat.

The welding tool and lead consists of a 10-ft. insulated flexible conduit with handle and nozzle, so that the operator can direct the electrode at the work. A tumbler switch in the handle permits the operator to close or open the line contactor, starting the feed motor in operation. When it is desired to weld with the shielded arc, it is merely necessary to change two nozzle accessories.

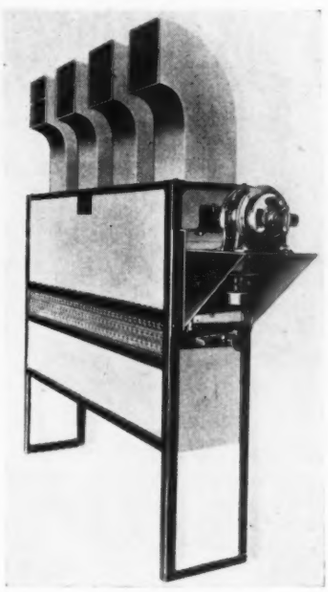
Semi-automatic arc-welding equipment can be used for welding applications in place of hand-welding equipment where the latter is too slow and where full automatic-welding apparatus cannot easily be applied. The chief advantage is the continuous feeding of the electrode, thus eliminating the time lost in changing electrodes as in the use of hand welding equipment. Use of the shielded arc, which surrounds the weld with an atmosphere of hydrogen, is to minimize the formation of harmful oxides and nitrides at the weld, and to produce a more ductile joint.

Heat-Diffusing Unit

A NEW heating unit, known as the super-control heat-diffusing unit, has been brought out recently by York Heating & Ventilating Corp., Philadelphia, Pa. This unit embodies new control features which, it is stated, result in a greater degree of efficiency than has been possible before.

The principle of operation is that the necessary heat output of the unit shall be mixed with room-temperature air within the heater, so that the resulting mixture is always held at the lowest possible final temperature consistent with producing the required room temperature. In effect, a sliding scale of leaving-air temperature is achieved, which is balanced to meet heating requirements. It is pointed out that an air stream carrying the necessary heat content is most easily held in the lower areas when the temperature of the mixture is maintained at the lowest possible temperature. The hotter the leaving air stream, the more vigorous is its tendency to rise. By tempering the heated air within the heater, it is possible to reduce this tendency to a minimum.

The same principle of high velocity discharge has been followed as has been featured in York equipment in the past. No throttling of the steam valve is necessary with the new unit, since it operates with full steam pressure on the coils at all times. Units can be furnished for either manual or automatic control.



Heat-diffusing unit with improved control features

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New Dyestuffs

Announcement of a new series of dyestuffs especially adapted for the level dyeing of viscose which, with ordinary direct dyestuffs yields streaky shades, has been made by Ciba Co., Inc., Greenwich & Morton Sts., New York. These colors, which are known as the Rigan dyestuffs, are products of the Society of Chemical Industry in Basle, Switzerland. The series consists at present of six colors, Rigan Blues G, R, 2R, and 5R, and Rigan Navy Blues G and R. Rigan Blue G is of a decided greenish cast and Rigan Blue 5R of pronounced reddish cast.

The Rigan dyestuffs are similar in behavior to ordinary direct colors and are applied in the usual manner. They dye viscose deeper than cotton; therefore when dyeing mixed fabric of these materials, the ordinary direct blue brands must be used as well. The new products are similar in fastness properties to all dyestuffs which yield level shades on streaky viscose. Owing to the nature of these dyestuffs, shades on cotton are not fast to water, and shades on viscose only moderately fast to water, washing, and perspiration. The Rigan dyestuffs are suitable for use for the hydrosulfite discharge.

The Dyestuffs Department of E. I. du Pont de Nemours & Co., Wilmington, Del., has placed on the market Pontacyl Fast Blue IB, an acid color yielding brilliant shades of navy blue on silk and wool, which are appreciably greener than those obtained with Pontacyl Fast Blue R. This color is said to produce full shades on raw wool, as well as on yarn and piece goods, and is particularly suitable for dark shoddy, both because of its brilliancy of shade and on account of the fact that when silk is present this is well covered. It is stated that the product is suitable for dyeing both pure and tin-weighted silk and when applied to these fibers possesses good fastness to hot moist pressing, perspiration, scrooping, steaming, water, and washing. Since cotton is left white, and rayon and cellulose-acetate threads are only very slightly stained, it may also be used for wool-silk mixtures and for combination materials where effect threads are desirable.

Newport Light Fast Violet SR conc., a fast-to-light direct color, of good solubility and level-dyeing properties, has been announced by Newport Chemical Works, Inc., Passaic, N. J. This color is of value in dyeing cotton or rayon yarns and pieces for draperies, novelty materials, etc. It exhausts at a medium rate of speed and is suitable for use either as a self color for pastel to brilliant reddish violet shades or in combination with other light-fast direct colors for a wide variety of mode tones. It leaves cellulose-acetate effect threads pure white in materials containing this fiber. Silk effects are dyed. This product discharges to a creamy tone.

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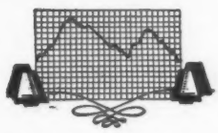

Price Irregularity in Silk Probable

Neither Sustained Rise Nor New Lows Are to Be Expected, Says Dr. Haney

Summary: **Although the statistical position shows a distinct trend toward improvement, raw silk prices cannot yet be expected to make a sustained advance. As long as hopes of a large seasonal gain in fabric sales exists, the market may hold irregularly sidewise, but a recession seems probable before the end of February. However, silk prices seem unlikely to make new lows.**

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The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

THE raw silk market is apparently in a "trading range," somewhere between $2.40 and $2.60. The quantity demanded tends to fall off on rises, but picks up on declines. Apparently, there is considerable business just under the market and price reductions result in closing business with buyers who hesitate on advances. All this suggests greater stability. The fact that the mills are said to be buying mostly from hand-to-mouth is not unfavorable, a fair volume of business under such circumstances being perhaps more significant than a larger volume of forward buying.

The chief dangers now appear to be (1) that renewed over-production of broad silks may develop, and, (2) that the Japanese may overdo an advance in raw silk with the result that control over supply will be weakened.

One point of general interest to the trade is found in the relatively large gain in silk spindle activity as compared with loom activity. This suggests that silk is recovering some of the ground lost on account of the inroads made by rayon.

This development, however, may increase the significance of the fact that "deliveries" are so much out of line with the activity of broad and narrow looms.

BULL POINTS

1. According to the National Raw Silk Exchange, world production in November continued to decline more than world consumption, and the ratio of Japanese exports to production improved.
2. The bulk of Japanese stocks (all but about 30,000 bales) is now held under financial arrangements with the government, and stocks under control of the Japanese government are now reported to be lower than supposed.
3. Arrivals from the filatures decreased in November, and seasonal and special curtailment is expected to reduce stocks at Yokohama and Kobe through March.
4. Japanese reelers are to begin operating on higher priced Autumn cocoons.
5. The Chinese sixth cocoon crop was below average and many filatures are closed for lack of material.
6. Domestic mill supplies of raw silk are believed to be moderate.
7. Demand for spun silk fairly good; thrown silk markets firm.
8. Broad silk manufacturers and converters appear confident of an improved seasonal demand in January and February.
9. The ultimate effects of curtailment by hosiery manufacturers will be beneficial.
10. Silk is cheap, favoring its use in real silk fabrics.

BEAR POINTS

1. The world supply of silk is ample and the visible supply is still large in comparison with demand.
2. Japanese shipments for the season to date are below a year ago; stocks increased a little in November.
3. Reeling activity is expected to increase temporarily this month.
4. Domestic mills may have unduly speeded production in November.
5. Many manufacturers are well supplied for nearby purposes and not inclined to anticipate Spring schedules; extreme caution and very little forward buying.
6. Continued maladjustments in the hosiery trade, with large stocks and low unfilled orders; manufacturers propose to curtail production, reducing the immediate demand for silk.
7. Strikes and labor difficulties.
8. The movement of silk merchandise is slow; prices of staple goods are on the weak side and profits low; uncertainty as to prices on Spring lines.
9. The French silk industry has been slowed up by financial difficulties.
10. Uncertainty as to rayon production and prices.
11. Artificial factors in the silk supply situation.

STATISTICAL POSITION

The November figures of the Silk Association show large imports, but lower stocks, leading to the conclusion that "deliveries" were large.

Imports, according to the Association, though showing a large seasonal decline, have been exceeded only in 1926 and 1929, and were only 2,000 bales short of estimated current deliveries. More-

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over, the quantity in transit decreased but little and at 45,500 bales continued unusually large.

On the other hand, United States stocks at the end of the month were reduced and were moderate. They were not far from the November average of recent years (omitting 1929), but unusually low in comparison with estimated deliveries, being only 86% thereof against 104% and 111% in the two preceding years.

Of course, estimated "deliveries" are derived from the preceding figures and have no other significance than balancing imports and stocks. Wherever the "deliveries" may have gone, they appear to have held up well in November, declining but little more than usual for the season. They were at least 10% above normal and probably that much above their average relation to the activity of silk spindles. Where is the silk going? Certainly not into hosiery, where strikes and curtailment are in evidence. In part, the deliveries may reflect a continuation of the September-October spurt in spindle and loom activity, and there was a little increase in total employe-hours in silk manufacturing in October. But in part, the deliveries seem to represent an accumulation of cheap silk on speculation.

The world visible supply decreased again in November. At 236,738 bales, however, it is still very large and nearly 70,000 bales above a year ago.

There was also considerable improvement in the relation between combined New York and Yokohama stocks of silk and the activity of domestic silk machinery. The stocks, adjusted for seasonal variation, in the last three months have averaged only 111% above the average of recent years, while machinery activity has risen to a point only 1% below average. There has been a marked gain since August.

The trend of the statistical position is *toward* strength. It is not yet strong, but it is less weak. On the assumption that October low prices discounted the known situation, the conclusion seems to be that the silk market has seen bottom and that sustained recovery is only a question of time.

Price Trends

The average price of Cracks XX in November was $2.483, against $2.481 in October. This compares with $5.085 a year ago. The markets were relatively stable in November, the bottom daily quotations moving from $2.40 to $2.38, to $2.55, and closing at $2.45,—a net gain of 5c. Eighty per cent seriplane ranged from 590 to 630 yen, showing a gain of 10 yen for the month. After Thanksgiving the market reacted until Dec. 4, cancelling the preceding rally. Then a spurt in the Japanese market, apparently based on the U. S. delivery figures, brought a sharp advance.

October wholesale sales of silk goods (yards) in the New York district, were 5.6% below September. Some decrease is usual in October, but not as much as this. Moreover, the sales were 5.1% under October, 1929. Stocks increased. Probably there was a further decrease in sales in November. As spindle and loom activity increased in October more than usual for the season, it is clear that there is some tendency toward renewed over-production. Certainly the price of staple silk goods, by its weakness, tends to support this conclusion. The healthfulness of the situation depends on whether there will be the usual January gain in sales, and upon the moderation of mill production.

We conclude that the statistical position is improved, but that (1) the general business outlook suggests some disappointment in spring silk business and makes some trouble with over-production likely, and, (2) the silk hosiery industry is curtailing, and (3) the estimated "deliveries" represent some accumulation in excess of consumption and supplies of cheap silk that will tend to hold prices down later. The general situation suggests continued irregularity with no large sustained increase. Possibly silk prices will reach a little higher levels between now and February. It seems rather probable, however, that before the end of February there will be a recession.

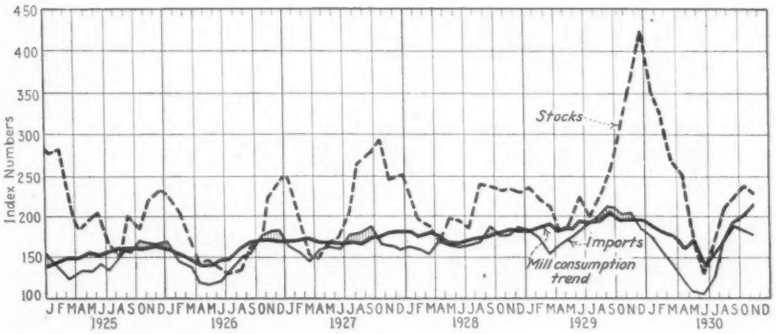
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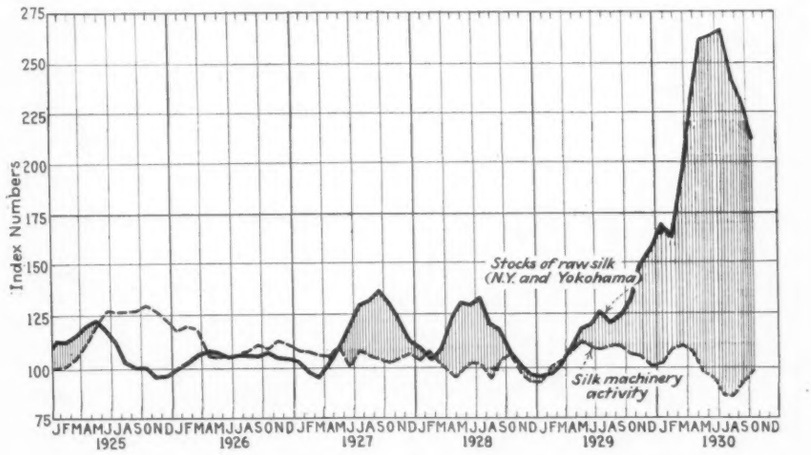
Fig. 1. STATISTICAL POSITION OF RAW SILK—Stocks of Raw Silk, Bales in storage at end of month. Average 1921 = 100 (Silk Association of America). Imports, Pounds. Average 1921 = 100. Three months' moving average (Dept. of Commerce). Last month estimated by converting each item of Silk Association figures from bales to pounds and then applying the per cent increase to preceding month. Factory Consumption, Trend, Deliveries—Bales, average 1921 = 100. Five months' moving average (Silk Association of America).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Stocks of raw silk (N.Y. and Yokohama)
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1929
1930

Fig. 2. RAW SILK STOCKS AND MACHINERY ACTIVITY. Stocks—N. Y. and Yokohama, adjusted for seasonal variation, three-month moving average; N. Y. Stocks, Silk Association; Yokohama Stocks, H. L. Gwalter & Co. Machinery Activity—Composite of spindles and looms adjusted for seasonal variation, Silk Association. Average 1923-1927 = 100 for both indexes.

The Textile Trend

Cotton Textile Markers: The cotton goods market has suffered its second set-back since the buying wave of September and October came to an end. In November sellers became frightened and lowered prices in a wild and meaningless attempt to book business when buyers were in no mood to buy. At that time reductions averaged ⅛c. Late last week and early part of

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this, sellers again contracted a case of the shivers and the result is prices are again lower by ⅛c. Although price-cutting began this time among second hands and later was confined to a few large selling organizations, the movement has become more widespread and at present is fairly general. The question is, how far will it go before it is arrested this time. The effect upon business has been the natural one; it has caused buyers again to withdraw, although the early price-cutters succeeded in booking a fair volume for delivery during the first three months of next year.

Wool Textile Markets

Colder weather is helping the market although effect is not apparent at the moment. Spot business is declining as end of year comes nearer, but better demand for winter clothing is putting the retailer in a better frame of mind and after the first of the year he will be more willing to order spring merchandise. Sampling of spring men's wear and dress goods lines has been widespread and if this wide distribution of samples leads to proportionate business, the mills will enjoy one of the best women's wear seasons they have seen for a long time. Evidences of this are already at hand, several manufacturers having opened their plants after long periods of idleness. Goods buyers usually want cheaper fabrics and to meet this demand mills are turning out goods made from lower grade stock, although the fabric will have the appearance of the higher priced material. Worsted yarns are quiet and prices easier.

Knit Goods Markets

Knit goods markets have entered holiday lull period. Advance coverage on 1931 bathing-suit lines is stronger and mills are confident regarding outlook; heavyweight sweaters waning after poor season. Spring sweaters picking up slowly; no big buying looked for at mill end prior to mid-January. Heavyweight underwear steady, and there is fair interest in springweight cottons; knitters inclined toward February opening as against January for fall lines. Hosiery outlook is hazy; moderate call for women's full-fashioned, stressing trams more than grenadines; holiday sales decidedly backward. Half-hose position improved. Mills inclined to take hosiery surplus issue seriously and numerous firms curtail. Much greater curtailment is necessary, however, in opinion of leaders.

Silk Textile Markets

Raw silk takes sharp rise, and advance fails to stem active buying. Broadsilk mills cover spiritedly for spring requirements. Exchange figures on trading unit show unbroken advance of 7 to 11 c. on all spot and future sales; market tone is good. Thrown yarn strengthened in sympathy with primary market, prices advancing 10 to 15c.; buying light. Spun silk moves actively, and mills are selling well into spring on shantung yarns; spinners will inventory exceptionally small stocks and regard outlook as satisfactory, with promise of strong January. Broadsilk mills enjoy strong last-minute call for winter flat crepes, which has brought mild price advance; some firms short of desired fabrics. Moderate call for spring prints, but otherwise tone is hesitant and no big buying is likely till after holidays.

Cotton Makes New Lows

Demand Tapers Off and Market Yields Under Liquidation

FEATURES tending to re-emphasize the unfavorable statistical position of cotton combined with the failure of trade to pick up more rapidly, have been reflected by further declines in the cotton market here during the week. Some trade buying has been in evidence, but it has been only on the declines or on a scale-down while the market otherwise has found practically its only support in profit-taking by previous sellers, and every bulge has met either liquidation or southern selling. Prices made new low records for the season with the new December contract selling at 10.00, while May contracts sold off to 10.57. These prices represented declines of just about 150 points from the high levels reached on the late October rally, and the market showed some indication of an improved technical position, but remained nervous and unsettled toward the end of the week.

Final Government Report

The Government crop report which was the final for the season placed the prospective yield at 14,243,000 bales, or about 195,000 bales below the Nov. 1 indication. It was without any apparent effect on the market, but its publication eliminated an uncertainty which had previously restricted business and caused evening-up of accounts. The reduction in the estimate was not sufficient to create fresh buying power, and people who had covered previous sales or had waited for the report before selling, came into the market. The extreme weakness of Egyptian threatening increased competition by Egyptian uppers with American cotton running from 1 1/32 to 1⅛ inch in staple was also a factor, and it is possible that the decision of the Egyptian government to suspend trading in futures at Alexandria for a period of 15 days, contributed to the unsettled ruling of the market here toward the end of the week. The action of the stock market also had an unsettling influence, and cotton which had been bought on a belief that the season's lows had been established on the break of early October, probably liquidated their holdings on the decline.

It would seen fair to assume that the declines have reflected a reassertion of the influences responsible for the selling of early last autumn and the fact that the recent trend of events has had a tendency to confirm the views then expressed, rather than any really fresh news feature or particular change in the situation. It is quite obvious that with a crop which including repacks, is likely to be only slightly short of 14½ million bales in round numbers and with present maximum ideas of the world's consumption ranging not over 13,000,000 bales, that the prospect is for an increase, as Chairman Legge was recently quoted as saying, of about 1,500,000 bales in the world's carry-over of American lint cotton at the end of this season.

Some traders are also inclined to question whether the world's consumption which for the first quarter of this season was at the rate of about 10,800,000 bales per year, can reach the 13,000,000 bale market for the entire season without a decidedly greater increase in trade than now seems in prospect. These statistical features have been re-emphasized because of prevailing dullness in the cotton goods markets at first hands which, of course, may be more or less a seasonal matter and perhaps largely the result of an almost universal disposition to reduce inventories to the vanishing point.

Nevertheless, a study of general business conditions and the statistical position of cotton seems to make it more certain that any hope of a substantial and a sustained advance in the price must be based upon a prospect for reduced acreage.

No Improvement in South

Memphis, Tenn., Dec. 8,—There has been no improvement in the cotton market here since its lapse shortly after the middle of November from a period of activity. Business is restricted because of poor mill demand, price differences between buyers and sellers and scarcity of wanted descriptions. It may be that business was slowed up by waiting for the government estimate published today but no one in the trade here believes the size of the crop, within the range of present possibilities, makes any material difference marketwise. Opinion is agreed that the market must wait upon improvement at the consuming end of the industry. Shippers and exporters say they have few orders.

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bales, the largest for the date in history; of this only 76,000 bales is in the hands of factors unsold. It therefore would appear plain, even allowing liberally for under-statement as to orders on hand for deferred shipment, that buyer stocks are far in excess of their commitments. This stock was acquired with an eye to its tenderability and, unless mill demand improves, much of it may be tendered on contract. Demand during the week centered on the bright low grades but offerings were light. Grade price differences remained about unchanged. Demand extended in a small way to off-colors. The staple market was dull with the asked basis slightly higher as a result of declines in contract values.

The week was moderately favorable for harvesting but very little cotton remains to be picked. The delta in Mississippi is expected to produce not more than 600,000 bales, with some expectations as low as 550,000 bales; production last year approximated 900,000 bales.

Cotton Yarn Buyers Liquid

Knitters Are the Only Trade That Covered Ahead on Yarns

COTTON yarn consumers will be more liquid at the end of this year than any within memory. There is less disposition to buy as end of the year comes nearer than in any former year. All in all there is a lack of interest on the part of weavers and knitters which is expected to be even more noticeable during the next two weeks.

Lack of interest on the part of knitters is not unexpected but spinners had thought that weavers might come into the market for early 1931 deliveries; this has not been the practice yet. Knitters need goods orders which they are finding it difficult to locate.

Knitters Have Contracts

There are contracts on spinners' books at present which were placed many months ago; what is needed is specification for this undelivered yarn. The worst feature of the knitting yarn situation is the fact bulk of orders on spinners' books were taken at prices several cents above the present level and knitters will take a paper loss on this whenever it is specified, assuming the cotton market fails to climb back to its early fall level.

Weavers have never ordered so far ahead as knitters and for this reason their yarn buying policy has been more successful this season. Few weavers have business placed for delivery much beyond the first of the year, a few exceptions including such large buyers as wire insulators.

Despite this condition the yarn market is giving a good account of itself, prices holding much better on the surface than cotton goods. Within the last week the latter have weakened when sellers forced business for delivery during first quarter of next year. Although cotton has softened there has been no change of importance in yarn quotations.

Quotations Hold Well

Spinners quote 20s-2 warps, average quality, at 22½ to 23c. and sales reported are at 22c. for this count and 27c. for 30s-2; plush warps in 20s-2 are available at 23c. and higher according to grade wanted; 10s cones, average grade, are held at 20c. but there has been business placed this week ½c. less.

Seasonal falling-off in yarn demand began earlier this year than usual, first being noticeable early in November. As end of the year approaches the practice is being more rigidly followed than in former years.

Combed peeler offers a contrasting bright spot. A large group of combed spinners has booked more orders in two-ply within the last four weeks than in four months previous, according to report. All trades have been buying more combed yarn, although orders have been small in size; weavers and mercerizers have bought, showing that any improvement in demand would quickly be felt right down to the spinner.

Combed Situation in South

Combed yarn spinners in the South report only slight declines in total sales as compared with average for two previous weeks, indicating that knitters and weavers have been forced to continue the practice of hand-to-mouth buying in December because of depleted yarn stocks. One spinner sees possibility that because of this situation sales volume may compare with that of previous Decembers. There has been no general increase in plant operation among combed yarn mills of the Gaston County area, and reliable figures show that these mills operated last week at only 46% of normal capacity.

Although cotton futures have been declining in recent weeks, spinners in the South point to a stiffening of the basis on the longer lengths, and predict an upward tendency in combed yarn prices during next few months. However, the trade generally agrees that stability of price structure in combed qualities depends on the successful control of production in line with actual demand.

Cotton Goods Have Relapse

Sellers Revert to Price-Cutting Methods

INSTEAD of theory the cotton goods market has been confronted with facts. While many stress the need for sellers to hold prices firm although demand has become smaller as the end of the year approaches, the opposite has been done. Sellers instead of holding firm have lowered prices under the former slightly lower levels.

Trading had been growing less active toward the end of November and during the month of December to date; but prices had not fallen more than ⅛c. Holders in most every instance were willing to wait for developments after the first of the year when it was expected that resumption of trading would be seen at or near the present price level.

Business Was Forced

Late last week and during the first part of the present week cutting of prices was resumed, not only by second hands but by several of the more important selling organizations. Print cloths were lowered another ⅛c., and more in a few instances. Most of the selling was by houses that felt they had not been getting their share of the business placed during previous months.

In order to strengthen their position for the first quarter of the new year they cut prices below the market and it must be admitted that they succeeded in booking a fair volume of business. It is estimated that between 5,000,000 and 7,000,000 yd. were sold within a period of two or three days for delivery during first quarter.

Market Level Is Lower

Prices of the most active and firmest print cloth, 80-squares, declined and at the middle of this week representative selling houses were quoting it at 7⅝c. for future and 7¾c. for spot delivery. The latter had formerly been held at 8c. and the lack of spot merchandise was thought to be a fair guarantee that this price would not be cut. After the reductions by at least two large sellers the rest of the market followed suit.

At present business has declined and the market presents a less active appearance than before the price cutting

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began. It is the old story but one many felt would not be repeated after the progress made during September and October. Instead of taking advantage of the present situation to expand margins, about which complaint has been so general, mills seem to be going back to their former practice of price-cutting for business when it is not there.

◆No Spot Demand for Cotton Waste

LITTLE business of consequence was done in cotton wastes this week and prices are largely nominal. A few sales of peeler comber and strips for January shipment were reported, but spot business was conspicuous by its absence. Dealers attribute the lack of spot demand to the desire of consumers to hold inventories to a minimum, and are hopeful that the latter will come into the market after the first of the year. Stuffing wastes were in fairly good call from batt manufacturers, willowed picker on a basis of 3¼ to 3½c., and fly 4¼ to 4½c.

Contracting for waste supplies for the coming year is gathering momentum, particularly in the South. The bases on which these contracts are made are held in strict confidence by individual dealers, but it is generally believed that there will be little spinning waste bought at less than 80%, with the bulk of the contracting being done on an 82% basis.

Merino Wool Leads Consumption

Fine Foreign Wool Shows Gains; Carpet Wool Consumption Slumps

THE wool market is in a condition of suspended animation. Manufacturers are not offering much support and the spotty buying by mills, confined as usual to the fine grades, is too small to affect the situation favorably. The recent openings in London and New Zealand have not been particularly encouraging. It seems, as the weeks go by, that importing houses might be in a position to do a larger business than for several seasons, providing wool manufacturing is maintained on present plane of activity.

Consumption of wool for clothing purposes for the first ten months of this year shows a decrease of about 20% grease basis. A significant feature of manufacturing activities is observable in the fact that the only types of wool showing any increased consumption during the year have been foreign merinos, fine foreign combing wool making a gain of 2,910,000 lb. and half-blood foreign clothing wool a gain of 45,000 lb. In conjunction with this increased use of foreign fine wool it may be pointed out that 31% of total wool consumption from January to the end of October was fine grade, as compared with 24% of total consumption during the same period of 1929.

The largest relative decrease in consumption this year has not been in wools for clothing purposes but in wools for the manufacture of rugs and carpets. Carpet wool consumption for the first 10 months of this year showed a decrease of 44% as compared with 20% for clothing wools.

Steady wool buying in the Colonial wool markets is encouraging, yet some members of the Bradford wool trade seemed convinced that there is too much wool in sight for the market to "run away," even if it is now touching bottom. It seems probable, however, that even if current selling season slows down there will be little carry-over of the finer wools next June.

The wool top market in Boston is still waiting larger operations on the part of spinners and other buyers. Top-makers have found it difficult to purchase wools on any lower level and for this reason are resisting attempts on the part of worsted spinners to establish a lower level of values.

Rag Prices Stiffening

The situation in woolen rags and reworks has improved slightly during the last two or three days, some of the standard rags taking on a little life partly as a result of actual mill purchasing and to a larger degree perhaps because of purchases by far-sighted men of distress lots of good materials. There is, nevertheless, no major change for the better and the market may have to project its hopes for betterment into the early part of the new year. Stocks of manufactured goods of the woolen order are undoubtedly small and the longer the delay in speeding up manufacturing operations and the sharper the change when it finally arrives. There is nothing in the situation to suggest any further decline of importance in prices. The condition of demand is so far out of a line with anything approaching the normal that slow but long continued expansion may be reasonably expected in the new year. In the meantime graders are making limited sales of fine and coarse light merinos, light hoods, thibets and white knits at prices that look like giving them away. There has recently been a rumor that substantial sales of dark worsted and fine mixed clips have been made to large mills without confirmation.

Wool Waste at Low Ebb

Prices on wool wastes are everywhere at a low ebb and the market is sadly in need of some substantial business. When woolen manufacturing is in a poor shape the waste market must follow in its steps. This is the story in a nutshell for the entire year to date, complicated by the further fact that virgin wool prices are at the low point for several years. Some dealers would like to convert their holdings into cash before the year ends, but if real necessity for liquidation occurs it will be consumated only on a lower price level, it seems. Colored materials in the English market are surprisingly high when regarded from the lowly position occupied by colored sorts in the Boston market. A fine colored thread could hardly be imported into Boston under 50c. per pound duty paid, while fine white threads could be brought in around 53c.

Noil Position Firmer

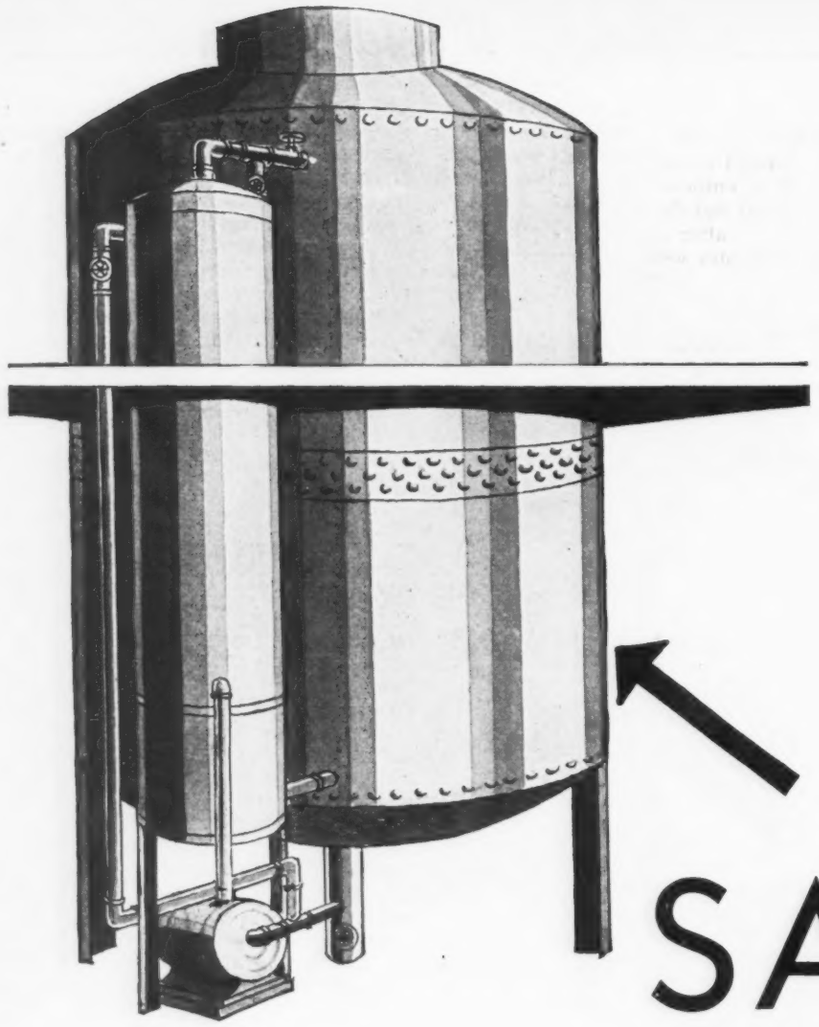
During the entire year the manufacturing situation has been moving adversely to merchandisers of wool noils. As compared with a year ago the worsted producing branch has been operating on a higher plane of activity than the wool consuming branch, so that comparing October statistics with those of a year ago woolen manufacturing is 37 points less active, recession in worsteds 19 points. These figures based upon distinctive machine activity for the two big branches of wool manufacturing indicate quite reliably, so it would seem, that the demand for noils for year to date has in the aggregate been substantially smaller than the output of noils.

Worsted Yarns Banking on Future

Prospects for Spring Season are Bright

YARN buyers do not think much of the present but are banking heavily on the future. This is indicated in current business which is conspicuous by its almost total absence and by the large volume of sampling that is being done for spring merchandise. All are of the opinion that worsted business will be good but no one is willing to go ahead on this basis.

This condition is in line with what is reported from most other trades, all



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being of the opinion that things are going to improve but no one anxious to be the first to do something to bring this nearer. Spinners selling both weaving and knitting yarns say they have never had such a wide distribution. If the amount of business they finally receive is in proportion to sampling they will have no cause for complaint.

Future Confidence Lacking

There is business being placed by men's wear manufacturers, a number of whom are doing a fair although uninteresting business in small lots. Manufacturers are buying mixture yarns in the same manner, refusing to order anything like the quantities that they have been in the habit of buying even during recent year when hand-to-mouth ordering was largely followed.

It was formerly felt that mixture yarn buying was of such a nature, the yarn being made according to specification, that mills would have to order fairly large amounts at a time. This idea has been destroyed this year, and men's wear firms are ordering mixtures in 1,000 lb. lots and smaller. The interesting feature is that spinners are taking such business with little complaint. It is noted, however, that smaller spinning concerns are booking most orders of this type and several are busy; larger ones are operating at greatly curtailed rates.

Although business is small there is renewed interest in dress goods counts and spinners believe there will be a large volume of 30s fine warp orders in the near future. Inquiries of this nature have been found recently, calling for fair sized quantities.

Swing to Single Yarns

End of the year lack of interest is the rule in outerwear counts, spinners operating at slightly less active rates than at this time a month ago. There is a decided opinion among them that they should not accumulate large stocks at the time buyers are not willing to operate. For this reason lack of demand will not cause any great increase in supplies as the year closes.

Demand for single counts where two-ply were formerly used is a tendency in knitting numbers and indications are this will become more apparent as volume orders for spring merchandise are placed. Bathing-suit manufacturers are sampling two-ply even less extensively than last year and the swing of this trade away from two-ply is going to be even larger than last season.

◆ Wool Goods Widely Sampled

SELLERS have resigned themselves to little interest for the balance of this year so far as volume orders are concerned. All are looking to spring season. There has been freer sampling of both men's wear and dress goods than in several years, and hopes are that orders will eventually amount to something.

Spot business has been curtailed by the approach of inventory time and by the lateness of cold weather. Low temperatures are helping right now, but they were late in coming. Business that should have been done by retailers in fall and winter merchandise has been lost in part and the balance will be in form of January sales, which will be at the cost of lower prices.

Cold Weather Helping

Lack of interest in spring merchandise by dress goods concerns is blamed on the lack of seasonal demand for winter coats so far. If these coats are moved after first of year, which is probable in view of cooler weather now, then spring merchandise will be helped along. There is widespread sampling of woolen and worsted dress goods at present and although future buying may not soon occur, there will probably be a good total eventually.

One of the outstanding features of the goods markets is the demand for lower priced fabrics. There are several lines of women's wear that began the present season at $4.25 a yd., which have been duplicated by other manufacturers out of lower grade wool and yarns, priced at $1.27½ a yd. The latter looks like the more expensive cloth, but will not give the service. This may be a feature that will react against the duplicators later.

An important reason, in addition to hand-to-mouth buying, for refusal of buyers to operate ahead is the lack of confidence in wool prices. They see world prices slipping and they feel that "next week goods prices may be 2½c. lower."

Silk Zig-Zags Upward

Yokohama Forces Price Rise Here; Recession Expected

RAW silk is again on its zig-zag way upward, with the likelihood that a few days will see another recession. Prices at the beginning of the week were about 10c. above last week, due to a firm tone in Yokohama, and for a few days domestic demand continued steady. However, the rise was too sudden to be maintained and the middle of the current week brought a letup in New York buying, which had the inevitable result of weakening quotations. It may be assumed that the path of raw silk for some weeks will be uneven, but chances are that, allowing for variations, there will be a slow upward trend. Importers have learned caution as regards sudden spurts, and the latest advance was regarded very skeptically. The market fundamentally is healthy, however, and confidence with respect to the longer outlook is somewhat stronger. The trade is, however, resigned to nearby fluctuations.

Weavers Buying

Current buying is done mostly by broadsilk houses, and a fair quantity of both spot and spring business was placed this week. These mills are producing spring fabrics steadily, though always in moderate quantity; they have minimum raw silk stocks on hand and buy almost pound for pound as they produce. The tendency toward curtailment of hosiery output has had a depressive effect on raw silk sales to these mills; hosiery knitters were indifferent this week, a negligible quantity of business being placed.

Yokohama's Position

Yokohama strength continues to inflate New York prices, and the cables were kept busy this week answering inquiries from New York importers as to what may be expected from Yokohama. The firm situation there is due to a shortage of raw silk stocks, and the presence of considerable poorly-assorted silk among the stocks available. It was announced that the filatures would close in March, which news tended to improve spring prospects. The domestic outlook for January and February hinges largely upon developments in Japan. It is felt that if Japan regulates production to demand, the usual letup in sales which occurs here about the end of February, should not cause any decisive weakening. However, there remains the big surplus warehoused in Japan to be considered, and only a very careful policy of slowly feeding this surplus into the American market would avert a real end-February weakness. Normally silk output in Japan drops about 25% in the January-February period and this should make for a stronger position.

◆ Spun and Thrown Show Good Inventory Position

SPUN silk demand continues to run to long-time commitments, and spinners have a substantial part of their spring business booked. The tone of the market is firm and the outlook for the coming year is satisfactory. Broadsilk mills still place some spot orders, but the bulk of the coverage is future, running from January to March delivery. Yarn stocks in spinners' hands are limited and fabric manufacturers

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have difficulty in getting immediate shipment of good-sized orders. Spinners have been producing very cautiously, despite a comparatively steady buying trend, and as a result they are ending the year with surprisingly low stocks; some mills were reported to be writing the smallest yarn inventories in years.

Thrown yarn prices have firmed, and the general tone of the market better, thanks chiefly to a strengthening at the Japanese end. Demand is still light, but a few firms are writing fair orders for the first quarter of the new year; most of this business comes from broadsilk mills; knitters as a whole are holding off and the hosiery mills are especially indifferent. Widespread recommendations to curtail have made hosiery firms cautious about forward purchases, and these mills placed a minimum of business this week. Throwsters are comparatively well satisfied with the outlook, but do not expect improvement until well into January; year-end stocks are moderate.

◆Flat Crepes Active; Prices Firming Up

BACKWARD buying by both cutters and retailers has had the expected result of precipitating a last-minute spurt in certain current broadsilk lines. The winter flat crepes are a case in point; demand for these fabrics registered a sharp pick-up in the past ten days and several leading silk houses are short of preferred shades. This situation has developed a fairly pronounced seller's market, as garment manufacturers who want the flat crepes find themselves obliged to pay fancy prices. It is late in the season for flat crepes and mills which discontinued these lines are averse to resume production of them, fearing a quick drop in demand which would leave them with unsalable stocks; this point also has served to make the flat crepe market firm.

Other Lines Hesitant

A general hesitancy prevails in other fabrics, but broadsilk mill men point out that this is normal for December, and they look to January with much confidence. Spring prints are gradually getting under way. Mills are shipping samples, and big-scale delivery is expected to start about Jan. 15. All sales are backward, with the prospect that January will bring spirited buying. Shantungs are still mostly a winter resort proposition. Cutters buying shantungs for manufacture of spring dresses are leaning to the $1.35 fabrics, which tends to confirm earlier reports that shantungs are likely to be a price proposition. A fair quantity of these lines is expected to go into ensemble and coat manufacture, but the bulk will go into popular-price dresses. Such at least is the growing belief of sales executives.

Broadsilk mills will end the year in a comparatively healthy position, so far as stocks are concerned. Numerous of the smaller units have sizable quantities to carry into inventory, but the trade as a whole—and especially the big mills—will enter the new year with limited stocks; some firms claim they are losing sales for lack of fabrics.

Good December for Rayon

Buying Exceeds Expectations; But Confidence is Lacking

CURRENT reports on rayon yarn sales show manufacturers to be playing a waiting game on even the earliest 1931 requirements. There is a light but steady influx of spot orders, both from weavers and knitters, and a limited group of cotton mills are buying into January; the January coverage is so small proportionately as to be inconsequential. Underwear manufacturers are buying as they produce, but inasmuch as production is fairly steady, the demand is encouraging.

Several large producing firms find their December sales to date above par with the year as a whole; the month is normally quiet, but this year low stocks in the mills compel considerable buying. Mills, especially the cotton weaving and underwear knitting groups, are growing more confident regarding the prospects for the first quarter of the coming year, and their hesitancy to buy ahead must be attributed in part at least, to the uncertain tone of the yarn market. Although domestic producers insist that there is little likelihood of an early rise, and emphasize the 60-day price guarantee as supporting this statement, the buying groups continue cautious.

Producers, however, believe that slow movement of stocks of finished goods is the chief cause of the lack of future coverage, and they assert that the buyers are using the "uncertainty of yarn prices" argument merely as an excuse. There is little likelihood of any improvement in yarn sales before Jan. 2 and even then the pick-up will be very slow; it goes without saying that some decisive statement, which is pretty generally looked for as an outcome of the reported London conference of rayon producers, would be a big factor in helping toward firmer buying.

There were intimations that the new year may bring a cut in the prices of finer denier yarns, due to the close competition between these yarns and silk.

Waste Shows Some Action

There was a slight pick-up in rayon waste movement, the new orders coming mostly from the woolen and worsted trades. One firm reported a substantial demand last week, but buying has declined again since then. Some of the stocks moving are of inferior quality, especially the unbleached thread waste. Dealers do not expect active buying before mid-January, but they regard the outlook as good.

Hosiery Mills Too Confident

Further Curtailment Needed; Stronger Bathing-Suit Demand

THE hosiery outlook is hazy; demand for women's full-fashioned appears to favor trams more than grenadines, but Worth Street is not enthusiastic about the quantity of buying at any end. Orders are astonishingly small for this time of the year, and the bulk of coverage is for spot delivery. A few jobbers and retailers placed January-February business during the week, but the contracts were only of "feeler" proportions. The expected big call for medium to high price lines as a gift proposition has not reached anything like the volume that was predicted.

Mill men are averse to offering opinions, due to the conflicting rumors regarding further price changes, and the uncertain situation generally. The advice of hosiery leaders to curtail and thus strengthen the position of the market in spring has had some effect on production, but the situation is still far far from satisfactory. The big hosiery mills are the most foresighted in this respect, and these companies are exercising a close watch on output. Production at present is well ahead of sales and the belief of observers is that mills, especially the small units, are too confident regarding sales prospects for the first quarter of the coming year. Half-hose has improved somewhat; there is a light but steady coverage on spring lines, and some mills have written fair advance business; prices are not too firm.

Outerwear Improves

Stronger call for bathing-suits for spring delivery brought encouragement to outerwear mills, and some firms have a substantial percentage of their season's output already covered. Prefer-

King Cotton visits the realm of King Cosmetic

THEY tell a story of how King Cotton once paid a visit to King Cosmetic. Long and earnestly the two monarchs conferred. And good King Cotton learned a great lesson from King Cosmetic. It was the lesson of trademarking and identification. And it was destined to help bring new prosperity to the land of Cotton—just as it had helped bring high fortune to the subjects of King Cosmetic.

❖ ❖ ❖

TODAY YOU WILL FIND comparatively few face powders or perfumes that are unbranded. Long ago the makers of cosmetics realized the value of trademarking and identification. On the other hand, you *will* find unbranded cottons —but it is significant that *you will not find as many today as you would have found a year ago.*

The fact is that more and more cotton manufacturers are trademarking their merchandise. The reasons? First —because in the last few years the consumer demand for identified, styled cottons has jumped tremendously. Second—because identification of their products has enabled manufacturers to make their advertising truly effective. Third—because substitution of inferior goods is positively prevented.

Since 1903 Kaumagraph has been trademarking headquarters for the textile and allied industries. It is natural therefore that since the new era of cotton prosperity, many cotton goods houses have enlisted Kaumagraph's aid in designing a trademark... and applying it to their products with Kaumagraph Dry Transfers.

If you are considering the advisability of trademarking, Kaumagraph would be glad to work with you. Our years of experience, our Research Laboratory, our service department... are at *your* service. Write for additional information—or for a representative.

❖ ❖ ❖

KAUMAGRAPH COMPANY
200 Varick Street New York City
Boston .... Chicago .... Philadelphia
Los Angeles... Chattanooga, Tenn... Charlotte, N. C.... Paris, Ont.... Paris, France

Also at 14 Lloyd's House, Manchester, Eng.

ence is for two-piece suits, of bright contrasting shades in modernistic jazzy designs, and men's and women's suits are selling equally well. Spring buying of swimsuits was so active this week that optimistic producers began talking of a sold-up condition in February; however, this is more a wish than a thought as yet. Jobbers and retailers are more confident regarding bathing-suits and the spring business of the current week included good-sized orders. Swimsuit production for the coming season is now proceeding actively; not many mills are in 100% output as yet, but the spurt of buying this week is expected to stimulate building up stocks. Winter sweater movement is waning, after a very unsatisfactory season, and knitters are not hopeful of much duplicate business. Spring sweaters have improved; medium-priced lines were in moderate call this week, but real volume business is not expected to develop until after New Year. Mill men expect the 1931 winter sweater lines to be shown in January as scheduled; the comment heard on that point this week was that "January is too early to look for sales, but not too early to get ready."

Underwear Steady

Underwear is steady, with increased interest in spring lines. Heavyweights continue in demand, and mills see these lines as stalling through January, which would necessarily put off openings until February. Prices have wavered a bit, but are rallying again. Backward buying has resulted in making December a record month for mills producing heavyweights, and the situation as a whole is encouraging. Worth Street factors this week expressed strong disapproval of any 1931 winter-weight opening before February, pointing out that January showings and announcements of any price cut would prematurely cut off movement of current stocks. That the openings will bring a downward price revision, due to the raw cotton drop seems to be assumed, though no one would make any guess as to the percentage of the cut.

Further Financial Readjustments

Several Dividend Reductions; Receiver Asked for Cadet Hosiery

THE week has brought its quota of readjustments in textile financial circles. Mills are working their way through a difficult period and hoping for better things in 1931.

Form Protective Committee

Holders of Consolidated Textile Corp., first mortgage 20-year 8% bonds have formed a protective committee following failure of company to meet interest instalment due Dec. 1. Members of the committee are Francis E. Storer, chairman, Louis H. Schroeder and Charles F. Batchelder.

Temporary Receiver for Cadet

Acting on a bill of complaint filed by Edwin S. I. Linscott, a stockholder, Judge J. Whitaker Thompson of the U. S. District Court, Philadelphia, on Monday placed the Cadet Hosiery Co., Inc., formerly the Cadet Knitting Co., of that city in the hands of a temporary receiver. Mr. Linscott charged that the hosiery concern faced financial difficulties because of alleged mismanagement by Caldwell & Co., bankers of Nashville, Tenn., a company that is itself in the hands of receivers, and which acquired control of the Cadet Corp. in 1929.

Allegations include the charge that more than $1,000,000, acquired when the firm changed hands, has been used up in building a mill at Columbia, Tenn., and in meeting heavy losses in operations. Books of the hosiery company show surplus of more than $600,000 as between assets of $2,188,658 and liabilities of $1,542,298, but the company, Mr. Linscott further alleges, has so little cash or assets for working capital that it would continue for only a few weeks longer and as its credit has become exhausted it would have to shut down its plants soon. Judge Thompson named David S. Ludlum receiver in charge on $50,000 bond, pending a hearing on Monday, Dec. 15 on a motion by the complaining stockholder to make the receivership permanent. It was reported that officers and directors of Cadet Hosiery Co. are planning to fight the receivership at the Monday hearing.

The Cadet Hosiery Co. operates plants at Philadelphia, Pa., and Columbia, Tenn. It is affiliated with the Cooper-Wells Co. hosiery manufacturers with plants at St. Joseph, Mich., and Decatur, Ala.

Real Silk Common Dividend Lower

In announcing a quarterly dividend of 75c. per share on Real Silk Hosiery Co. common, which places the stock on a $3 yearly basis against $5 previously, President P. M. Farrell stated that they expected to earn enough to cover the $5 dividend, but enlarged plant required enlarged capital and the company considered it more conservative to decrease the dividend. Sales for the first ten months of this year were ahead of last year, he said, but conditions, such as the drop in raw material, over which they had no control, reduced the percentage of profit below normal. The company had more employees than last year, he stated, expected to end the year with no excess stocks and looked forward to 1931 with confidence.

Duplan To Buy Additional Stock

Directors of Duplan Silk Corp., operating plants in Pennsylvania, have authorized additional purchases of the company's preferred stock, and acquisition of not over 50,000 shares of common stock. The corporation is asking for tenders for sale to it of the preferred stock at $105 per share and accrued dividends, and common stock at $14.75 per share. The offer expires Dec. 15. Following an offer on Oct. 1 approximately $150,000 par value of preferred stock has been purchased by the company at $105 per share and accrued dividends.

Bibb To Retire Preferred

Bibb Mfg. Co., operating nine cotton mills in Georgia, has called for retirement Jan. 1, 1931 its $5,000,000 preferred stock at $103 a share, plus dividend of $3 already voted. Redemption will be effected from reserves.

Grinnell Shows Loss

A manufacturing loss of $297,199 was reported by Grinnell Mfg. Co., cotton goods, New Bedford, Mass., for the fiscal year ended Sept. 30, 1930. No allowance was made for depreciation this year. Net working capital on Sept. 30, 1930, totaled $1,041,217 or $298,855 less than a year ago, most of the decline being due to an inventory shrinkage of $273,000.

West Point Cuts Dividend

Directors of the West Point Mfg. Co., Boston, Mass., have declared a quarterly dividend of $1.50 a share, payable Jan. 2, 1931, to stock of record Dec. 15. This represents a reduction from the $8 annual rate established in 1921; since 1920, when the company paid out $25 a share, the annual rate has been as follows: 1921, $8; 1922, $6; 1923, $7; 1924 to 1930, $8. In January of this year an extra dividend of $1 per share was paid.

Another Decline in South

Charlotte, N. C.—A decline of 20c. per share was recorded in the average bid price of 25 common stocks of southern cotton mills for the week ended Dec. 6 as noted from the weekly summary furnished by R. S. Dickson & Co. The average price close stood at 60.92 as compared with 61.12 for the previous week.

Boston Stock Auctions

The following sales of textile shares were made at Wednesday's auctions:

Shes.	Mill	Par	Price	Change
38	Associated Textile	...	35–36¼	....
380	Newmarket	100	14–15	....
5	Renfrew, pfd.	100	1 for lot	....
140	Charlton	100	25	....
100	Nashua, com.	100	17	+4½
100	Samoset	100	20	+3½
300	Pacific	100	18	+ ½
1063	Total			

QUOTATIONS

at close of business, Dec. 10, 1930
Prices cover average qualities unless otherwise stated

Cotton Goods

	Dec. 10	Dec. 3	Dec. 11 1929
PRINT CLOTHS			
27 -in., 64x60, 7.60.	4–4¼c.	4¼c.	4¾–4¾c.
38½-in., 64x60, 5.35.	5½c.	5½c.	6½–7c.
39 -in., 68x72, 4.75.	6½c.	6½c.	7½–8c.
39 -in., 72x76, 4.25.	6½c.	7c.	8½–8½c.
39 -in., 80x80, 4.00.	7½–7¼c.	7½–8c.	9⅜–9½c.
BROWN SHEETINGS			
36-in., 56x60, 4.00..	6½c.	6¾c.	8¼c.
36-in., 48x48, 3.00..	7c.	7¼c.	10–10½c.
37-in., 48x48, 4.00..	5½c.	5¾c.	7½–7¾c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70.	6½c.	6¾c.	8¼–8¾c.
36½-in., 64x60, 5.75.	5½c.	5¼c.	7¼c.
MISCELLANEOUS			
Drills, 37-in., 3 yd...	7¼c.	7¼c.	10¼c.
Denims, 2.20.....	12¼c.	12½c.	15c.
Tickings, 8 oz	16 c.	16 c.	20–21c.
Standard prints.....	7½c.	7¼c.	9½c.
Eastern staple ginghams, 27-in.....	8 c.	8 c	10 c.

Cotton Waste

Peeler comber	9 — 9½
Peeler strips	7¾ — 8¼
Sak. comber	8½ — 9
Choice willowed fly	4½ — 5
Choice willowed picker	3 — 4½
Sak. strips	10½ — 11
Linters (mill run)	2¼ — 3½
White spooler (single)	7¼ — 8

Cotton Yarn

CARDED (Average Quality)
Double Carded 2c.–4c. higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s....	$0.20½	22s.....	$0.23
10s.....	.20½– .21	24s.....	– .24½
12s.....	– .21	26s.....	– .25½
16s.....	.21 – .21½	30s.....	.26½– .27
20s.....	– .22	40s ex.qual..	.39 – .40

TWO-PLY SKEINS AND TUBES

8s-2.....	$0.20½– .21	26s-2.....	$0.25½– .26
10s-2.....	– .21	30s-2.....	– .27
12s-2.....	.21 – .21½	36s-2.....	.33 – .34
14s-2.....	– .21½	40s-2.....	.34 – .35
16s-2.....	.21½– .22	40s-2 hi.brk.	.38 – .39
20s-2.....	.22 – .22½	50s-2.....	.43 – .44
24s-2.....	.24½– .25	60s-2.....	.53 – .54

SINGLE WARP

10s.....	$0.20½	24s.....	$0.24½– .25
12s.....	– .21	26s.....	.25½– .26
14s.....	– .21½	30s.....	.27 – .27½
16s.....	.21½– .22	40s ex. qual..	.39 – .40
20s.....	.22 – .23		

TWO-PLY WARPS

8s-2.....	$0.21	24s-2.....	$0.25 – .25½
10s-2.....	.21 – .21½	26s-2.....	– .26
12s-2.....	– .21½	30s-2.....	.27 – .27½
14s-2.....	.21½– .22	40s-2 ordin..	.35 – .36
16s-2.....	– .22	50s-2.....	– .45
20s-2.....	.22 – .22½	60s-2.....	– .54

8s-3 and 4-ply skeins and tubes; tinged, 18–18½; white, 19½–20; waste 17–17½

HOSIERY CONES (Frame Spun)

8s.....	$0.19½	22s.....	$0.23 – .23½
10s.....	– .20	24s.....	.23½ – .24
12s.....	– .20½	26s.....	.24 – .24½
14s.....	– .21	30s tv ng....	.26 – .26½
16s.....	– .21½	30s reg.....	.27½– .28
18s.....	– .22	30s ex. qual..	.29½ – .30½
20s.....	– .22½	40s.....	.36 – .37

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

29s-2.....	$0.35 – .36	60s-2.....	$0.55½– .56½
30s-2.....	.40 – .41	70s-2.....	.65½– .66½
36s-2.....	.41 – .42	80s-2.....	.76 – .78
40s-2.....	.43 – .44	90s-2.....	.92 – .95
50s-2.....	.48 – .49	100s-2.....	1.15 –1.20

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2.....	$0.36 – .37	60s-2.....	$0.56½– .57½
30s-2.....	.41 – .42	70s-2.....	.66½– .68
36s-2.....	.42 – .43	80s-2.....	.77 – .80
40s-2.....	.44 – .45	90s-2.....	.95 –1.00
50s-2.....	.49 – .50	100s-2.....	1.18 –1.20

SINGLES

12s.....	$0.28½	30s.....	$0.38½
14s.....	–.29	38s.....	– .41½
16s.....	–.29½	40s.....	– .42
18s.....	–.30	50s.....	– .47
20s.....	–.31	60s.....	.54 – .55
24s.....	–.33½	70s.....	– .64
28s.....	–.37	80s.....	– .75

MERCERIZED CONES—(Combed, Ungassed)

26s-2.....	$0.50 – .51	90s-2.....	$1.29 –1.32
30s-2.....	.52 – .53	100s-2.....	1.59 –1.61
36s-2.....	.55 – .56	120s-2.....	1.98 –2.05
40s-2.....	.58 – .59	30s.....	.63 – .65
45s-2.....	.60 – .61	40s.....	.68 – .70
50s-2.....	.62 – .64	50s.....	.75 – .77
60s-2.....	.70 – .72	60s.....	.83 – .85
70s-2.....	.82 – .84	70s.....	.95 – .97
80s-2.....	.94 – .98	80s.....	1.17 –1.19

Cotton Prices and Statistics

FLUCTUATIONS OF FUTURES

	Closed Dec. 4	For Week High	For Week Low	Closed Dec. 10	Net Chge.
December..	10.37	10.41	10.02	10.02	—35
January...	10.47	10.48	10.08	10.09	—36
February..	10.59	10.59	10.20	10.20	—39
March.....	10.72	10.79	10.31	10.35	—37
April.....	10.84	10.86	10.40	10.40	—44
May.....	10.96	11.05	10.57	10.60	—36
June.....	11.05	11.07	10.69	10.69	—36
July.....	11.14	11.20	10.77	10.79	—35
August....	11.19	11.22	10.85	10.85	—34
September.	11.24	11.28	10 90	10.90	—34
October....	11.32	11.37	10.96	10.98	—34

SPOT FLUCTUATIONS FOR WEEK
(Middling)

	New York	New Orleans	Liverpool
Friday, Dec. 5.....	10.45	10.11	5.70
Saturday, Dec. 6....	10.50	10.11	5.68
Monday, Dec. 8.....	10.30	9.97	5.67
Tuesday, Dec. 9.....	10.30	9.92	5.59
Wednesday, Dec. 10.	10.15	9.78	5.63
Thursday, Dec. 11...	9.95	9.63	5.44

FOREIGN COTTONS
Egyptian Cotton

Alexandria Exchange, Dec. 10		Change
January Sak.....	14.35	—1.27
December uppers.....	10.65	—0.32

Dec.-Jan. Shipment c. i. f. Boston.
(Tariff not included)

Fully good fair Sak.....	17.50
Fully good fair to good Uppers.....	13.25

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling.....	21½
Peruvian Pima No. 1.....	23½
Peruvian Moderate Rough.....	17½
Peruvian Full Rough.....	22
China Tientsin No. 1.....	10.75
India Rough.....	8½ to 11
India Smooth.....	8½ to 11

(By Gerald G. Loeb, New York.)

BASIS MIDDLING

	Saturday, Dec. 6	Saturday, Nov. 29
10 markets average.....	9.73	9.88
Memphis.....	9.20	9.35

PREMIUM STAPLES
First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices Steady
1⅛-in.....	12.10@12.25c.
1 3/16-in.....	13.60@13.75c.
1¼-in.....	18.25@18.50c.

CURRENT SALES

	For Week	Prev. Week	Week Before
Memphis total.....	20,846	20,458	31,335
F.o.b. included in total...	19,744	19,118	25,444
10 markets.....	113,108	123,006	168,744

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts.....	28,883	27,537	30,548
Gross receipts.....	53,690	63,698	61,456
Total since Aug. 1, net...	467,929	589,133	422,182
Shipments.....	44,599	61,171	64,781
Total since Aug. 1.....	534,846	778,438	659,919
Total stock.....	395,629	385,917	223,313
Increase for week.....	9,091	2,527	*3,327
Unsold stock in hands of Memphis factors.....	76,049	61,567	.....
Increase for week.....	1,822	*2,061	.....

*Decrease.

AVERAGE PRICE DECEMBER SHIPMENT
HARD WESTERN COTTON
F. o. b. New England

	Middling	St. Middling
1 1/16 in.....	12½–12¾c	12½–12¾c.
1⅛ in.....	13 –13½c	13½–14 c.
1 3/16 in.....	14½–15 c.	15½–16 c.
1¼ in.....	19 –21c.	20 –22 c.

Basis on New York, New January 10.07c.

SPOT FLUCTUATIONS AND STOCKS

Market	Middling Dec. 3	Middling Dec. 10	Sales	Stocks This Week	Stocks Last Year
Galveston....	10.15	9.85	4,719	701,402	502,555
New Orleans	10.11	9.78	17,117	762,651	525,091
Mobile.....	9.70	9.30	3,792	164,105	46,973
Savannah...	9.92	9.57	1,485	294,773	89,734
Norfolk.....	10.13	9.81	781	97,656	69,176
New York...	10.40	10.15	3,547	231,523	98,065
Augusta....	9.75	9.38	2,732	141,864	108,424
Memphis...	9.15	8.80	17,292	402,615	391,328
St. Louis....	9.25	9.15	.....	9,923	8,535
Houston....	10.10	9.85	22,054	1,522,848	1,134,677
Dallas.....	9.55	9.20	25,312	44,139	10,418

DIFFERENCES ON AND OFF MIDDLING

	Dallas	Memphis	Montgomery	Augusta	Average
WHITE GRADES					
M. F.....	.75†	1.00†	.85†	.75†	0.89†
S. G. M.....	.60†	.75†	.75†	.63†	.70†
G. M.....	.50†	.50†	.60†	.50†	.51†
S. M.....	.35†	.25†	.35†	.25†	.30†
S. L. M.....	.75*	.75*	.65*	.50*	.69*
L. M.....	1.50*	1.75*	1.50*	2.25*	1.60*
S. G. O.**....	2.50*	2.75*	2.50*	3.50*	2.56*
G. O.....	3.50*	4.00*	3.50*	4.50*	3.55*
YELLOW TINGED					
G. M.....	0.50*	0.75*	0.50*	0.50*	0.58*
S. M.....	1.00*	1.25*	1.00*	1.00*	1.05*
M.**.....	1.75*	2.00*	1.50*	1.50*	1.68*
S. L. M.....	2.50*	2.75*	2.25*	2.25*	2.37*
L. M.**.....	3.50*	4.00*	3.00*	3.00*	3.30
YELLOW STAINED					
G. M.....	1.50*	1.75*	1.50*	1.50*	1.58*
S. M.**.....	2.25*	2.50*	2.50*	2.50*	2.40*
M.**.....	3.00*	3.25*	3.50*	3.50*	3.23*
BLUE STAINED					
G M.**.....	1.75*	2.00*	1.75*	1.75*	1 78*
S. M.**.....	2.25*	2.75*	2.75*	2.75*	2.48*
M.**.....	3.00*	3.25*	3.75*	3.75*	3.28*

**Grades not deliverable on contract. †On Middling
*Off Middling.

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne..	$0.29 –$0.30	¾ blood.....	$0.28 –$0.29
Fine clthg ..	.24 – .25	¼ blood.....	.28 – .29
½ blood.....	.29 – .30		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.71 –$0.73
California, Northern	.61 – .63

PULLED—EASTERN (CLEAN BASIS)

A.A.	$0.70 –$0.73	B-Super...	$0.48 –$0.55
A-Super....	.61 – .63	C-Super...	.43 – .45

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.72 –$0.75
Staple ½ bld.	.68 – .70
Fine and fine medium	.68 – .70
½ blood	.58 – .60
¼ blood	.55 – .57

MOHAIR—DOMESTIC

Best Carding	$0.32 –$0.35
Best combing	.45 – .48

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.21 –$0.23
Cape firsts	.23 – .25

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.63 –$0.65
64s	.48 – .50
58s-60s	.42 – .45

(IN GREASE)

Montevideo:	
58s-60s	$0.20 –$0.21
56s	.19 – .20
50s	.18 – .19
Buenos Aires:	
4s, 40-44s	$0.13 –$0.14
5s, 36-40s	.11 – .12

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo	$0.25 –$0.26
China: Combing No. 1	.14½– .15
China Filling Fleece	.13 – .14
Szechuen ass't	.14 .14½
Cordova	.13 – .14
Scotch black face	.14 – .15
East India: Kandahar	.20 – .22
Vican'r	.24 – .26
Joria	.23 – .25

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.87½– .90
2-24s 40s	.97½–1.00
2-26s 44s	1.05 –1.07½
2-28s 46s	1.10 –1.12½
2-30s 48s	1.15 –1.17½
2-32s 50s	1.20 –1.25

(Single yarns 5c. less than above)

2-36s, 58s	$1.32½–1.35
2-40s, 60s	1.40 –1.45
2-40s, 64s	1.45 –1.50
2-50s, 66s	1.60 –1.65
2-60s, 70s	1.97½–2.00

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.87½– .90
2-20s, 48s in oil	– .95
2-20s, 50s in oil	.97½–1.00
2-20s, 56s in oil	1.07½–1.10
2-20s, 60s in oil	–1.27½
2-20s, 64s in oil	1.32 –1.35
1-15s, 46s dyed	1.10 –1.12½
1-15s, 48s dyed	1.12½–1.15
1-15s, 50s dyed	1.15 –1.17

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	$1.15 –$1.17½
1-20s, 60s	1.20 – 1.22½
1-18s, 64s, Dyed	1.50 – 1.52½
1-26s, 64s	1.25½– 1.27½
1-30s, 60s, Warp	1.30 – 1.32½
1-30s, 64s, Warp	1.35 – 1.37½
2-30s, 64s, Fancy mixes	1.65 – 1.67½
2-40s, 64s, Zephyrs	– 1.55
1-50s, 66s	1.60 – 1.62½
2-50s, 66s	1.75 – 1.80
1-60s, 70s	1.95 – 1.97½
2-60s, 70s	2.10 – 2.15

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$1.02½–$1.05
1-40s, 50-50-60s on cops	1.15 – 1.17½
1-40s, 50-50-64s on cops	1.17½– 1.20
1-40s, 50-50-64s Australian cops	1.25 – 1.30

Underwear mixes, 3c. additional.
Solid color, 35c. additional.

◆

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.95–$0.97
Half-blood (60-62s)	.88– .90
High ¾ blood (58s)	.80– .82
Aver. ¾ blood (56s)	.78– .80
Low ¾ blood	.73– .75
High ¼ blood (50s)	.70– .72
46s S. A. and N. Z.	.60– .63
44s S. A. and N. Z.	.58– .60
40s S. A. and N. Z.	.58– .60

TOPS—BRADFORD, ENG. (DEC. 4)

Fine (70s)	27½d	¾ bld. (56s)	15½d
Fine (64s)	24 d	½ bld. (50s)	13 d
¾ bld. (60s)	22 d	Cross-bred (46s)	10 d
¾ bld. low (58s)	18½d		

NOILS—BOSTON

Fine	$0.51–$0.53	High ¼ bld..	$0.42–$0.45
Half-bld.	.48– .52	Low noils...	.35– .38
Aver. ¾ bld..	.45– .48	Medium colored...	.35– .37
Fine colored.	.43– .45		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.70 –$0.73
Lap, fine colored	.53 – .55
Hard ends, fine white	.56 – .58
Hard ends, ¼ blood white	.38 – .40
Hard ends, fine colored	.23 – .25
Hard ends, medium colored	.18 – .20
Card, fine white	.28 – .30
Burr, fine Carbonizing	.33 – .35

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.06 –$0.07
Merinos, Fine Dark	.04½– .05
Merinos, Fine Light	.12½– .13
Serges, Blue	.06½– .07
Serges, Black	.07 – .07½
Serges, Red	.10½– .11
Knit, White	.21 – .22
Knit, red	.15 – .16
Knit, Light Hoods	.13 – .14
Worsted, Light	.05½– .06
Worsted, Blue	.07 – .07½
Worsted, Black	.07 – .07½

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. spec. gd. XX. sk. 85%.	$4.05
Japan organzine, 2 thd. sp. crack. sk. 81%.....	3.70
Japan crepe, 3 thd. gd. XX bob. 83%.....	3.90
Japan crepe, 3 thd. sp. crack. bob. 81%.....	3.95
Japan crepe, 4 thd. crack bobbins, 78%.....	3.85
Japan grenadine, 4 thd. sp. grand singles, 87%	6.00
Japan grenadine 4 thd. 85%.....	5.65
Japan grenadine 3 thd. 90%.....	7.05
Canton crepe, 3 and 4 thd. ns. 14/16 on bobbins	3.00
Hosiery tram, 3 thd. Japan 90%.....	5.00
Hosiery tram, 5 thd. Japan, 85%.....	4.05
Hosiery tram, crack XX 78%.....	3.10

SPUN SILK YARNS (Terms: net 30)

40/2	$3.35	60/2.....	$3.65
50/2	3.55	62/1.....	2.50

Raw Silk

(60 day basis)
Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 86/88%.....	$3.90	$2.90	$2.90
Special Grand, 85%.....	3.30	2.80	2.80
Grand XX, 83%.....	3.00	2.65	2.65
Special Crack, 81%.....	2.70	2.60	2.60
Crack XX, 78%.....	2.60	2.55	2.55
Extra Extra, 73%.....	2 50	2.45	2.45
Best Extra, 68%.....	2.45	2.35	2.35

Canton filature, new style, 14/16	$1.95
Canton filature, new style, 20/22	1.80
Tussah filature, 8 cocoon	1.25

NATIONAL RAW SILK EXCHANGE

	Close Dec. 3	For the Week High	For the Week Low	Close Dec. 9	Net Chge.
December.....	2.38	2.44	2.27	2.45	+.07
January.....	2.34	2.45	2.32	2.45	+.11
February.....	2.35	2.44	2.30	2.45	+.10
March.....	2.35	2.44	2.30	2.44	+.09
April.....	2.35	2.44	2.29	2.42	+.07
May.....	2.33	2.44	2.27	2.43	+.10
June.....	2.33	2.44	2.27	2.42	+.09
July.....	2.32	2.44	2.28	2.42	+.10

Dec. 3 to Dec. 9, total contracts, 634. Total number of bales, 6,340. Total approximate value, $15,850.00. Trading unit is Crack XX 13-15, white 78%.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
50	14	$2.15	$1.95
75	18	1.60	1.50
75	30	1.70	1.60
100	18	1.25	1.15
100	40	1.30	1.20
125	36–50	1.20	1.10
150	24–30	.95	.90
150	36–40	1.00	.95
150	60	1.15	1.10
150	75–90	1.20	1.15
170	24–27	.95	.90
170	60	1.15	1.10
200	30	.90	.85
200	35–40	.90	.85
200	75–80	1.10	1.05
300	44–60	.78	.75
450	54–60	.78	.75
600	72–96	.78	.75
900	100–144	.78	.75

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.60	$1.50	150	$0.95	$0.90
100	1.25	1.15	175	.95	.90
125	1.20	1.10			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	65	45	$2.00
25	24	2.85	80	60	1.70
30	24	2.60	100	75	1.40
40	30	2.40	120	90	1.30
52	30	2.20	150	112	1.25
			180	135	1.10

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.25 2.75	120	$1.90
55	2.05–2.55	140	1.30
65	2.45	150	1.40–1.85
75	1.80–2.70	200	1.55
100	1.65–2.45	300	1.50

Rayon Waste

Prices Nominal

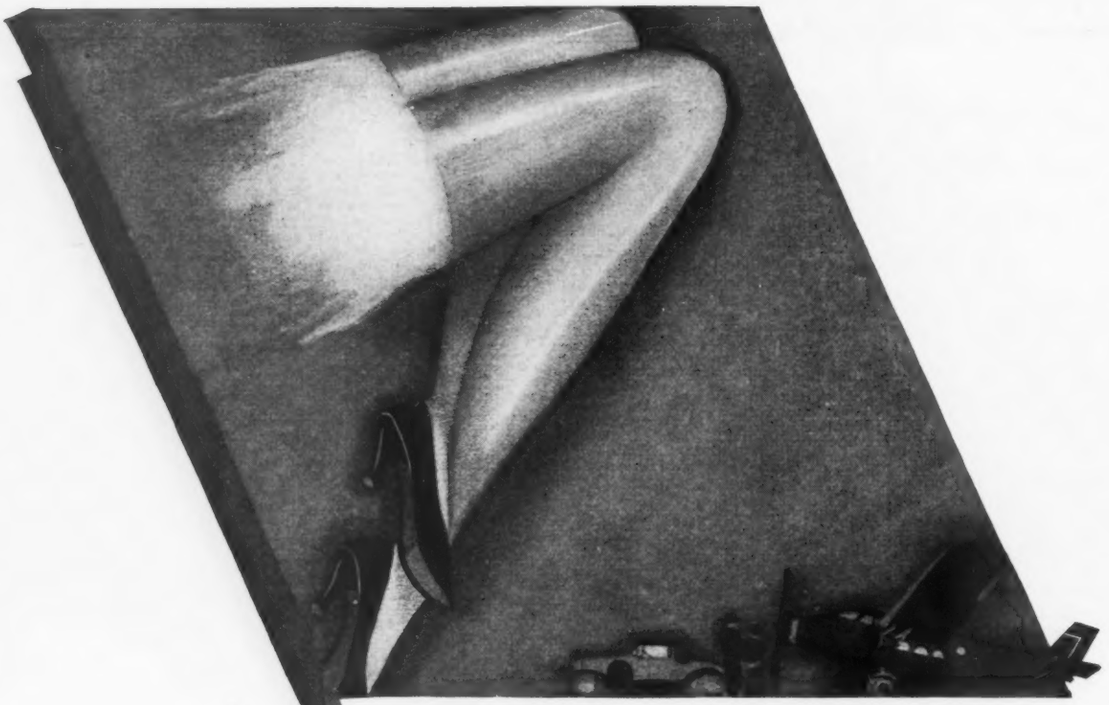
Open bleached waste	–$0.15
Open unbleached waste	– .13
Bleached thread waste (mfs.)	– .10
Bleached thread waste (misc.)	– .09
Colored thread waste	– .08
Colored clips	– .07

CONVERTED RAYON WASTE

Bleached tops	–$0.45
Unbleached tops	– .40
Bleached noils	– .15
Bleached garnetts	– .16
Unbleached garnetts	– .15
Colored garnetts	– .13

Silk Waste

Kibizzo Kakai Grand XX	$0.54
Kibizzo Kakai Triple Extra	.48
Frison Grand Double	.52½
Pierced Cocoons	.53



SHAPELY beauty of a fitted stocking . . . sheer, *smooth* beauty without seams!

For the delight of the smart woman whose hose must be gossamer perfection without a seam to break the contour, yet snugly free from wrinkles, there is this stocking . . . made on the new Model "K" machine . . . with trim fitted ankle and narrowed "Gussetoe" *shaped in the knitting.*

ESTABLISHED 1865

SCOTT & WILLIAMS
INCORPORATED

366 Broadway
New York, N. Y.

The "Gussetoe" . . . the smooth, fitted foot . . . with no seam or ridge.

No seam to twist or mar the sheer.

Southern Mill Securities

(A. M. Law & Co., Spartanburg)

	Bid	Asked
Abbeville Cotton Mills	..	50
Anderson Cotton Mills	60	65
Arcade Cotton Mills	..	50
Arcadia Mills	..	200
Arcadia Mills, pfd	85	90
Arkwright Mills	..	50
Augusta Factory, Ga	..	20
Avondale Mills, Ala	700	900
Beaumont Mfg. Co	200	250
Beaumont Mfg. Co. 7 % pfd	95	100
Belton Mills	..	20
Belton Mills, pfd	60	65
Bibb Mfg. Co	90	95
Brandon Corp., A	..	40
Brandon Corp., B	..	6
Brandon Corp., pfd	..	75
Calhoun Mills	..	90
Chadwick-Hoskins Co. (par, $25)	7	9
Chesnee Mills	..	40
Chiquola Mfg. Co	..	200
Chiquola Mfg. Co., pfd	83	88
Clifton Mfg. Co	88	92
Clinton Cotton Mills	..	225
Columbus Mfg. Co., Ga	55	65
Cowpens Mills	..	20
D.E. Converse Co	..	85
Dallas Mfg. Co., Ala	35	40
Darlington Mfg. Co	..	50
Drayton Mills	70	..
Dunean Mills	100	110
Dunean Mills, pfd	92	97
Eagle & Phoenix Mills, Ga	..	60
Easley Cotton Mills, pfd	..	35
Enterprise Mfg. Co., Ga	..	100
Fairforest Finishing Co., serial notes	95	100
Florence Mills	40	45
Florence Mills, Pfd	97	100
Gaffney Mfg. Co	..	20
Gainesville Cotton Mills, Ga	..	125
Glenwood Mills	85	95
Gluck Mills	55	61
Gossett Mills	..	50
Graniteville Mfg. Co	..	90
Greenwood Cotton Mills	500	..
Grendel Mills, pfd. (par, $50)	40	45
Hamrick Mills	..	90
Hartsville Cotton Mills	120	130
Hunter Mfg. & Com. Co., pfd	67	71
Industrial Cotton Mills Co., pfd	..	30
Inman Mills	100	120
Inman Mills, pfd	95	100
Judson Mills, A, pfd	90	95
Judson Mills, B, pfd	88	93
King, John P. Mfg. Co., Ga	80	90
Lancaster Cotton Mills	225	..
Laurens Cotton Mills	..	110
Limestone Cotton Mills	..	90
Lydia Cotton Mills, serial notes	94	100
Marion Mfg. Co., N. C	..	100
Marlboro Mills	..	15
Mills Mill, pfd	80	90
Mollohon Mfg. Co., pfd	90	100
Monarch Mills	..	85
Musgrove Cotton Mills	..	20
Newberry Cotton Mills	95	102
Ninety-six Mills	400	..
Norris Cotton Mills	..	30
Orr Cotton Mills	..	50
Orr Cotton Mills, pfd	60	65
Pacolet Mfg. Co	..	90
Pacolet Mfg. Co., pfd	..	75
Panola Cotton Mills, Class A, pfd. (par, $60)	45	50
Pickens Cotton Mills	105	115
Piedmont Mfg. Co	..	95
Piedmont Print Works (no par)	..	10
Piedmont Print Works, pfd	..	60
Poe, F. W. Mfg. Co	19	22
Riverside & Dan River Mills	9	10
Riverside & Dan River Mills, 6% pfd	59	65
Saxon Mills	..	50
Sibley Mfg. Co., Ga	50	60
Southern Bleachery	..	20
Southern Bleachery, pfd	..	70
Southern Bleachery, serial notes	95	100
Southern Franklin Process	18	22
Southern Franklin Process, pfd	95	100
Southern Worsted Corp., pfd	70	80
Spartan Mills	..	120
Spencer Corp., serial notes	95	100
Union-Buffalo Mills	..	30
Union-Buffalo Mills, 1st pfd	65	71
Union Buffalo Mills, 2nd pfd	..	35
Victor-Monaghan Co	51	53
Victor-Monaghan Co., pfd	100	110
Wallace Mfg. Co	..	100
Ware Shoals Mfg. Co	120	130
Whitney Mfg. Co	..	20
Woodside Cotton Mills Co	..	30
Woodside Cotton Mills, pfd	..	35
Yarns Corp. of America, gold bonds	95	100

New England Textile Stocks

Quotations at "Public Sale" are based on last sales at Boston Public Auctions and Boston Stock Exchange. Bid and Asked prices are latest quotations of dealers.

	Sale	Bid	Asked
Am. Mfg. Co	50	52	56
Amoskeag	7	...	....
Arlington	18½	18	19
Associated Textile	36½	34	37
Bates	64	64	66
Berkshire, Associates, com	8½	7	9
Berkshire Associates, pfd	72	...	41
Bigelow-Sanford, com	32	...	...
Boott Mills	120½	...	108
Edwards	80½	63	65
Esmond, pfd	102	96	99
Farr Alpaca	70½	67	69
Hamilton Woolen	40	30	35
Hill	18	14	18
Indian Orchard	20½	20	25
Ludlow	117½	117	120
Merrimack, com	45½	41	44
Nashua, com	17	15	19
Nashua, pfd	66	56	60
Naumkeag	84	82	85
Newmarket	15	14	18
Otis	43	29	32
Pacific	17½	...	...
Pepperell	85	83	86
Plymouth Cordage	66	67	70
York	8½	6	8

Textile Calendar

Textile Converters Association, Annual Meeting, Hotel Pennsylvania, New York, Dec. 16, 1930.

Wool Institute, Men's Wear Worsted Group, Institute offices, New York, Dec. 16, 1930.

Wool Institute, Men's Wear Woolen Group, Institute offices, New York, Dec. 16, 1930.

Wool Institute, Women's Wear Group, Institute offices, New York, Dec. 17, 1930.

Wool Institute, Manipulated Fabric Group, Institute offices, New York, Dec. 17, 1930.

North Carolina Hosiery Manufacturers Traffic Association, annual meeting, Sedgefield Inn, Greensboro, N. C., Dec. 20, 1930.

Southern Textile Association, Dyers', Bleachers' and Finishers' Division, Regular Meeting, Hotel Charlotte, Charlotte, N. C., Jan. 10, 1931.

The Textile Forum, N.A.C.M., master mechanics, Boston (Mass.) Chamber of Commerce, Jan. 13, 1931.

Silk Association of America, Annual Dinner, New York, Jan. 15, 1931.

The Wool Institute, Annual Meeting, New York, latter part of January, 1931.

Boston Wool Trade Association, annual banquet, Copley-Plaza Hotel, Boston, Mass., Feb. 5, 1931.

The Textile Forum, N.A.C.M., warp preparation and weaving, Boston (Mass.) Chamber of Commerce, Feb. 10, 1931.

The Textile Forum, N.A.C.M., overseers of finishing, Boston (Mass.) Chamber of Commerce, March 10, 1931.

Knitting Arts Exhibition, Commercial Museum, Phiadelphia, April 13 to 17, 1931.

Exposition of Chemical Industries, Grand Central Palace, New York, May 4 to 9, 1931.

American Cotton Manufacturers Association, Thirty-fifth Annual Convention, Hotel Traymore, Atlantic City, N. J., May 21 to 23, 1931.

Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended Dec. 10:

	High	Low	Last Sale	Net Chge.
Adams Millis	23½	23½	23½	+1
*American Thread, pfd	3	3	3	....
American Woolen	7	6⅛	6⅛	—1⅛
American Woolen, pfd	23	18¼	19⅜	— ⅜
*Assoc. Rayon, pfd	38⅛	38½	38½	— ⅛
Belding-Hemingway	3¼	3¼	3¼	— ¼
*Blumenthal	12½	12	12	— ⅛
Botany Mills, A	3	3	3	....
Cannon Mills	20	19	19½	— ½
Century Ribbon	3⅞	3⅜	3⅜	— ⅛
Collins & Aikman	14½	12½	12½	—2½
Consolidated Textile	⅜	⅜	⅜	— ⅛
*Courtaulds, Ltd	9½	9⅜	9⅜	—1⅛
Durham Hosiery, pfd	23	23	23	....
*Fabrics Finishing	⅛	⅛	⅛	— ⅛
Gotham Hosiery	6½	5⅜	5⅜	—1⅛
Industrial Rayon	53	45½	47½	—5½
Kayser, Julius	16	15½	15⅝	—1⅛
Kendall, pfd	36	33½	35	—1
Mallinson	3½	2½	2⅞	— ⅜
*Mock Judson	7	5	5	—6
Mohawk Carpet	11⅞	11⅛	11⅛	— ⅜
Munsingwear	32½	29	29	—4
Pacific Mills	16½	16½	16½	— ½
*Pepperell	83⅜	83⅜	83⅜	— ⅜
Phoenix Hosiery	8⅛	8⅛	8⅛	+ ⅛
*Powdrell & Alexander	25½	25	25½	—7½
*Propper-McCallum	4	4	4	....
Real Silk Hosiery	33	29	29	—4½
*Tubize Chat B	5¾	4½	4½	—1¼
United Piece Dye Works	24	23½	23½	+ ½

*Listed on Curb.

Fall River Mill Stocks

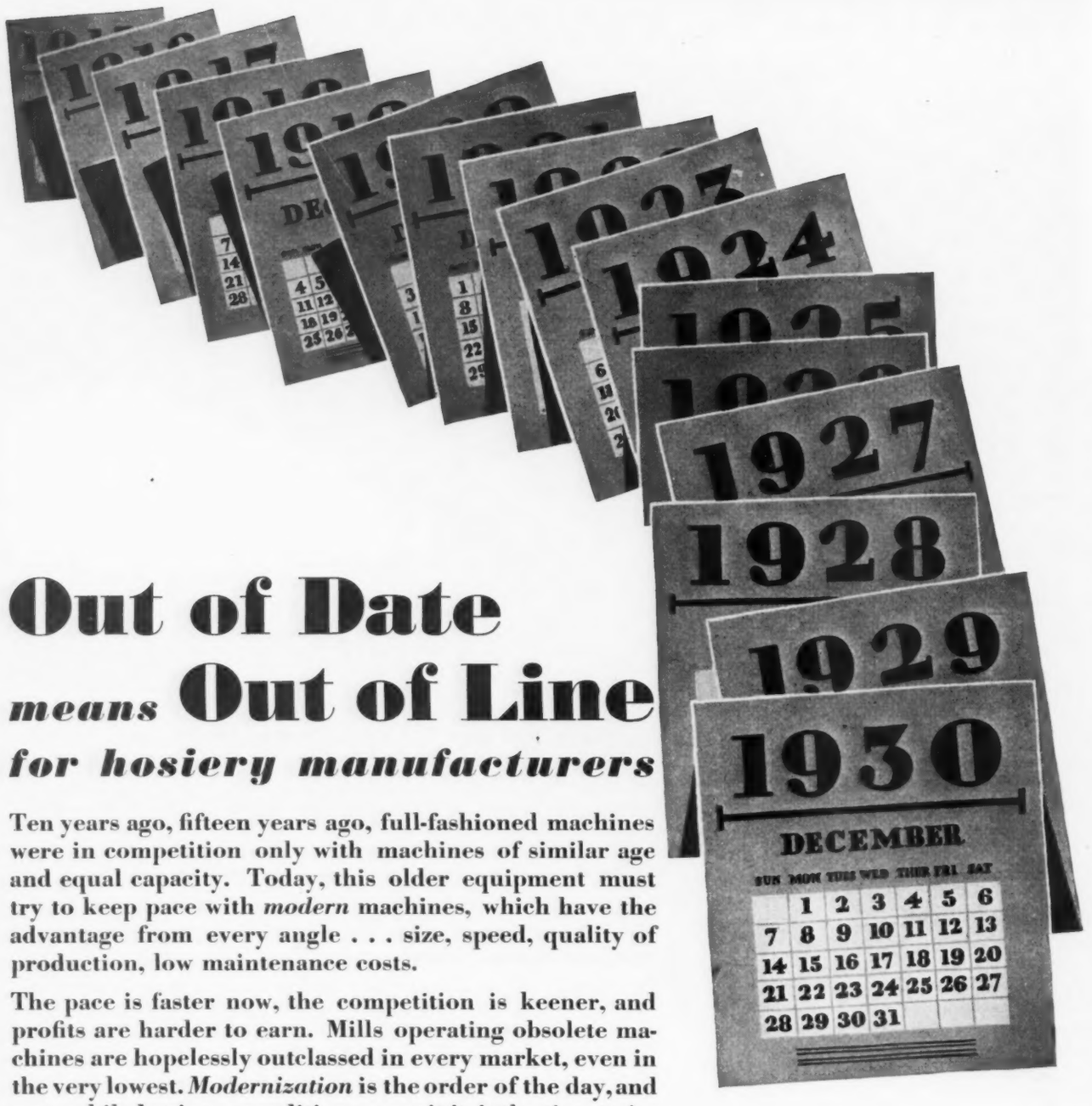
(G. M. Haffards & Co., Fall River)

	Bid	Asked
Algonquin Printing Co	300	320
Barnard Mfg. Co	..	10
Berkshire (com.)	7½	9
Berkshire (pfd.)	..	50
Bourne Mills	11	..
Border City Mfg. Co	3	..
Charlton Mills	..	50
Cornell Mills	..	..
Davol Mills	..	5
Flint Mills	45	..
King Philip Mills	3	..
Laurel Lake Mills (com.)	..	10
Luther Mfg. Co	..	85
Merchants Mfg. Co	20	..
Narragansett Mills	..	5
Osborne Mills, Inc	..	..
Pepperell Mfg	83½	85
Pilgrim Mills	28	..
Richard Borden Mfg. Co	..	3
Sagamore Mfg. Co	59	..
Shove Mills	..	5
Stevens Mfg. Co	28	..
Union Cotton Mfg. Co	17	..
Weetamoe Mills	..	1

N. Carolina Mill Stocks

(R. S. Dickson & Co., Charlotte, N. C.)

	Bid	Asked
Acme Spinning Co	60	75
American Yarn & Processing Co	60	71
Chadwick-Hoskins Co. (Par $25)	7	10
Chadwick-Hoskins Co., 8%, pfd	90	96
China Grove Cotton Mills	80	88
Climax Spinning Co	50	65
Clover Mills	..	24
Converse, D. E. Co	78	82
Crescent Spinning Co	47	55
Dixon Mills	90	98
Durham Hosiery, 6%, pfd	20	26
Eagle Yarn Mills	50	63
Efird Mfg. Co	60	80
Erwin Cotton Mills	..	114
Erwin Cotton Mills Co., 6%, pfd	80	95
Flint Mfg. Co	80	90
Flint Mfg. Co., 7%, pfd	90	92
Globe Yarn Mills (N. C.)	..	16
Gray Mfg. Co	..	75
Hanes, P. H. Knitting Co	7	10
Hanes, P. H. Knitting Co., 7%, pfd	90	96
Henrietta Mills, 7%, pfd	40	55
Imperial Yarn Mills	..	60
Linford Mills	60	71
Locke Cotton Mills Co	40	55
Majestic Mfg. Co	100	120
Mansfield Mills	..	60
Mooresville Cotton Mills	..	6
Mooresville Cotton Mills, 7%, prior	..	75
Myers Mills	..	55
Myrtle Mills	..	51
National Yarn Mill	50	60
Perfection Spinning Co	50	66
Ranlo Mfg. Co	..	110
Roanoke Mills	..	60
Rosemary Mfg. Co., pfd., 7½%	93	100
Rowan Cotton Mills Co	60	74
Seminole Cotton Mills Co	..	70
Sterling Spinning Co	50	65
Stowe Spinning Co	50	61
Victory Yarn Mills Co	30	50
Ware Shoals Mfg. Co	115	125
Ware Shoals Mfg. Co., 7%, pfd	90	98
Winget Yarn Mills Co	33	50
Wiscassett Mills Co	155	180

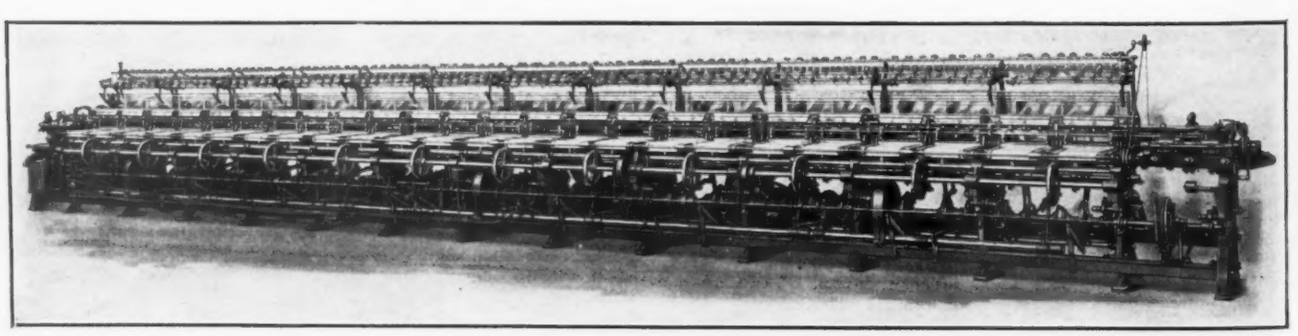


Out of Date
means Out of Line
for hosiery manufacturers

Ten years ago, fifteen years ago, full-fashioned machines were in competition only with machines of similar age and equal capacity. Today, this older equipment must try to keep pace with *modern* machines, which have the advantage from every angle . . . size, speed, quality of production, low maintenance costs.

The pace is faster now, the competition is keener, and profits are harder to earn. Mills operating obsolete machines are hopelessly outclassed in every market, even in the very lowest. *Modernization* is the order of the day, and now, while business conditions permit it, is the time to install machinery which shows immediate and lasting profit.

TEXTILE MACHINE WORKS
Reading, Penna.



The Reading Full-Fashioned Knitting Machine as it stands today—after 32 years of development—is the lowest priced, highest producer ever offered.

H. P. Kendall Reelected Taylor President

Problems of industrial management were analyzed and discussed from various angles by experts at an international meeting of the Taylor Society, Dec. 3 to 5, held at the Pennsylvania Hotel, New York. Election of officers was the feature of the Dec. 4 session and Henry P. Kendall, president of the society since 1928 was chosen to succeed himself. Mr. Kendall is president and treasurer of the Kendall Co., of Boston. Other officers elected were: Arthur T. Davenport, director and general manager of Sweet-Orr & Co. of New York, vice-president; Edward W. Clark 3rd, of E. W. Clark & Co., bankers, of Philadelphia, treasurer. These three were also elected members of the board of directors, other members of the board elected being Francis Goodell, industrial engineer of the Naumkeag Steam Cotton Co. of Salem, Mass.; Hudson B. Hastings, professor of industrial engineering at the Sheffield School, Yale University; and Harlow S. Person, managing director of the Taylor Society.

A tentative industrial code to serve as framework for wage adjustments and related problems, was submitted at the Friday Dec. 5, session and was discussed by several speakers including John P. O'Connell of the Textile Workers Union, who was active in the development of the unionized plant of the Naumkeag Cotton Mill, at Salem, Mass. and H. F. R. Scheel, vice-president of Botany Consolidated Mills.

Ribbed Hosiery Knitters Hold Trade Conference

Various aspects of trading policy were discussed at a trade practice conference of the ribbed hosiery industry, which was held Thursday morning under the auspices of the Federal Trade Commission, at Hotel Patten, Chattanooga, Tenn. The delegates discussed: Interference with contracts, defamation of competitors, enticement of employees, threats of suit for patent or trade-mark infringement, price discrimination, false branding, commercial bribery, arbitration, piracy of designs, establishing minimum standards, adoption of uniform contracts, free samples, and other questions.

Silk Brokerage Rates

At a meeting held Dec. 5, at the New York offices of the Silk Association of America, the Raw Silk Brokers Committee voted unanimously to adopt the following rates for brokerage as the basis for computing commissions on raw silk:

Brokerage is payable by seller and when not otherwise arranged shall be: ½% on prices above $3.50 per lb.; ¾% on prices above $2.00 up to $3.50 per lb. inclusive; 1% on prices up to and including $2.00 per lb.

Broker's commission is earned when sale is made, and it is due on date of actual delivery of silk, or on repudiation or cancellation of sale with or without indemnity. Brokerage is not due on sales cancelled from causes beyond the control of seller as provided in the Raw Silk Rules.

This scale goes into effect Dec. 15.

N.R.D.G.A. Fashion Show

A new type of fashion show is to be a feature of the 20th annual convention of the National Retail Dry Goods Association to be held at the Hotel Pennsylvania, New York, during the first week in February. This show will differ from the usual "Fashion Show" in that fewer garments will be exhibited, and each model will clearly define outstanding merchandise points in which buyers can place their confidence of volume business. The models to be shown will be decided upon by the fashion committee and will then be allotted to manufacturers who will produce the garments according to specifications.

Leipzig Fair March 1 to 7

The Leipzig (Germany) Trade Fair will be held from March 1 to 7, 1931. The spring fair will comprise 10,000 exhibits, assembled from 22 countries, thus constituting the largest and most varied market in the world. The exhibits of similar merchandise will be displayed in the same or closely grouped buildings. There are some 67 buildings in all. Visiting buyers at Leipzig find it possible to shop through a score of countries quickly and economically. An attendance of some 200,000 buyers is said to be assured at the spring fair, including 30,000 from countries outside of Germany.

Annual Meeting of N. C. Hosiery Traffic Men Set for Dec. 20

The annual meeting of the North Carolina Hosiery Manufacturers Traffic Association will be held at the Sedgefield Inn, near here, Dec. 20, at which officers and directors for the ensuing year will be elected, according to announcement of Morris Prince, of Greensboro, secretary of the association.

J. E. Millis, of High Point, is the present president; R. O. Huffman, of Morganton and C. C. Cranford, of Asheboro, are vice-presidents, and J. J. Corrigan, of High Point, is treasurer.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Dec. 6, based upon data compiled by the Market News Service of the Bureau of Agricultural Economics, Department of Agriculture, follow:

	Week Ended Dec. 6	Total to Date 1930	Total to Date 1929
Domestic.....	3,604,000	343,105,000	204,407,000
Foreign.....	1,219,000	58,569,000	92,363,000
Total.....	4,823,000	401,674,000	296,770,000
IMPORTS AT PRINCIPAL PORTS			
Boston.....	1,219,000	58,569,000	92,363,000
Philadelphia..	747,000	41,935,000	84,898,000
New York....	1,164,000	43,193,000	70,338,000
Total.....	3,130,000	143,697,000	247,599,000

R. G. Hurlimann Again Heads Silk Travellers

Nearly 500 silk salesmen and managers attended the annual meeting and dinner of the Silk Travellers Association, Inc., which was held Dec. 4, at the Hotel Astor, New York. Election of officers for the coming year was the first order of business. Robert G. Hurlimann, of C. G. Aschmann & Co., was reelected president, and the other officers chosen were: Tom M. Jardine, first vice-president; Christopher S. Adams, Fabrics Finishing Corp., second vice-president; H. W. Smith, Clifford & Lawton Inc., secretary, and W. C. Leopoldt, of Associated Dyeing & Printing Co., treasurer. The members voted to approve the new constitution and by-laws, as revised. A new board of governors and a new membership committee were elected. The unemployment situation was discussed in detail and the members voted to recommend that the board of governors donate $1,000 to the Prosser Unemployment Committee of New York.

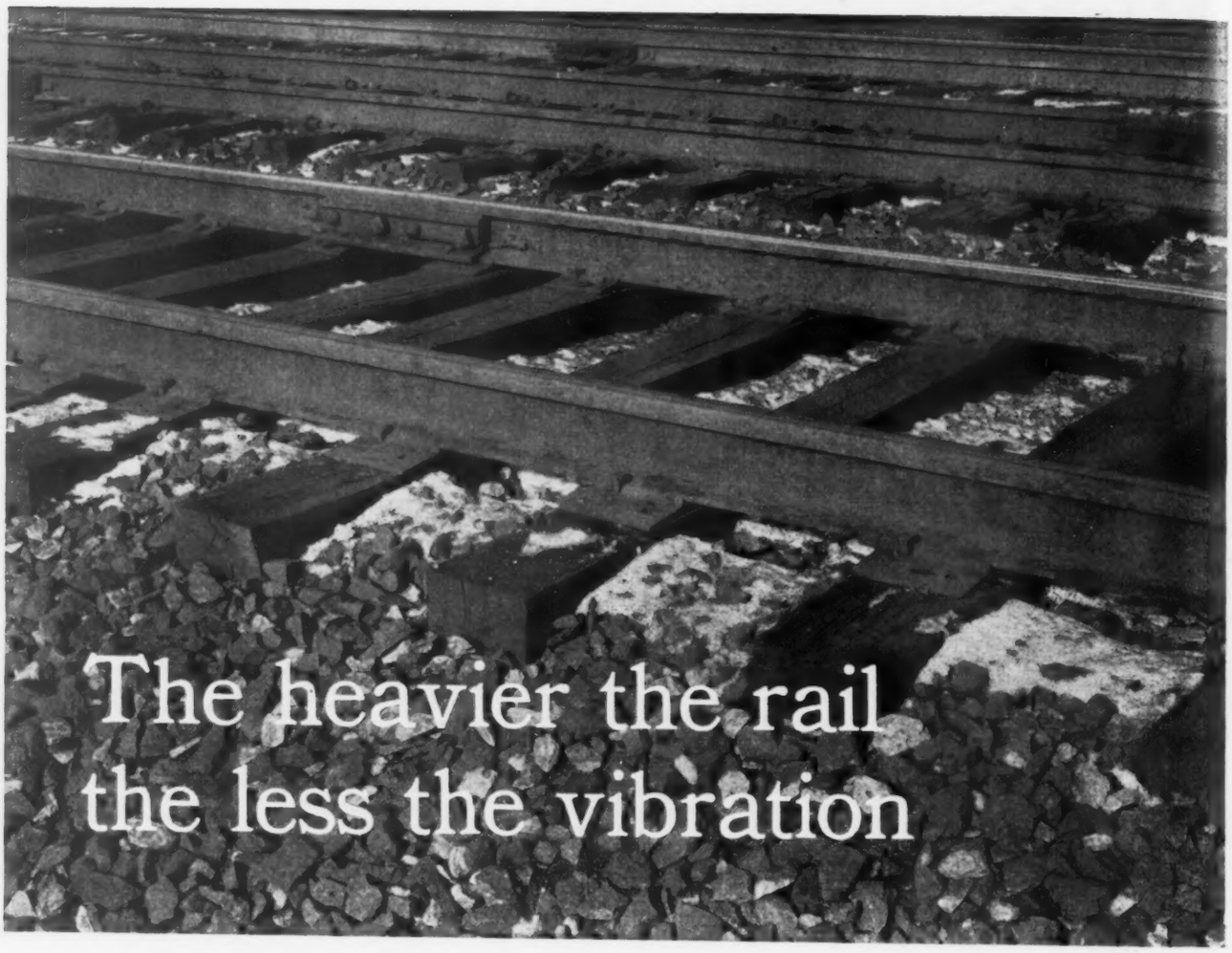
A. B. Strange Heads Commission Throwsters Group

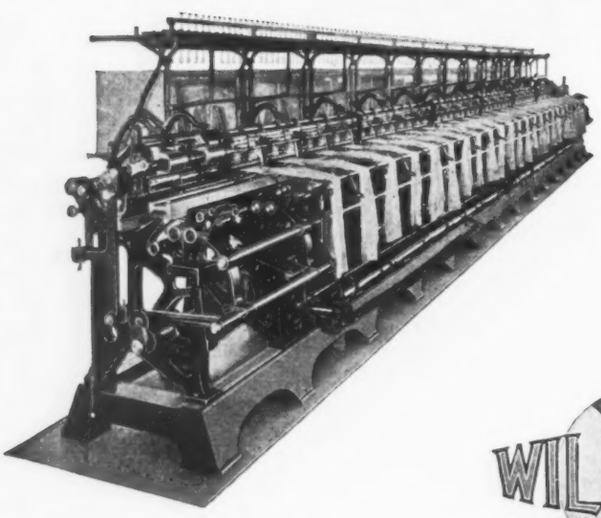
A. B. Strange, Read & Lovatt Mfg. Co., was elected chairman of the Commission Throwsters Division of the Silk Association of America, Inc., succeeding H. A. Reiling at the annual meeting held Tuesday at the Advertising Club, New York City. T. H. Mueller, R. K. Laros Silk Co., was elected vice-chairman. The executive committee, headed by Mr. Strange, includes Neil V. Butler, Richard V. Butler, Peter F. Magagna, Nanticoke Silk Throwing Co.; George Friedlander, Duplan Silk Corp.; V. P. Hattemer, Vulcan Silk Co.; H. A. Reiling, H. A. Reiling, Inc.; T. H. Mueller, R. K. Laros Silk Co.

A study of the variation of twists will be undertaken during the coming year, it was reported at the meeting. E. Rohr, Duplan Silk Corp., Peter F. Magagna, T. H. Mueller and V. O. Hattemer were appointed to undertake this work. The formation of a new section of the Commission Throwsters Division at Danville, Pa. will be another divisional activity.

Wool Institute Meetings Scheduled

Following the announcement that the activities of the Wool Institute will be carried on through 1931, a series of group meetings have been arranged to work out details and to consider problems in connection with the next season. Men's wear worsted meeting will be held Dec. 16, at 10.30 a.m. and men's wear woolen the same day at 2.30 p.m. The following day women's wear woolens and worsteds will meet at 10.30 a.m., and in the afternoon a meeting of manufacturers of manipulated fabrics is scheduled. Chairman of the various groups will be elected and these will make up the board of directors of the Institute for the next year.





HEAVY rails and plenty of trap rock for ballast cut down vibration and make it smoother going for the 20th Century.

In the same way the extra-heavy base has cut down vibration in the Wildman Full-Fashioned Hosiery Machine. This is but one of many Common-Sense improvements in this new Wildman Product.

Write for further information

WILDMAN MFG. CO.
Full-Fashioned Division
NORRISTOWN, PA.

WILDMAN
THE WORLD'S STANDARD

WILDMAN
FULL FASHIONED HOSIERY MACHINE

Silk Association Names Nominating Committee

The Silk Association of America Wednesday appointed a nominating committee to choose candidates for the board of managers, the action being taken at the quarterly meeting of the board at association headquarters.

The committee consists of John D. Dunlop, of Jno. Dunlop's Sons, Inc.; C. H. Dimick, of National Silk Dyeing Co.; William O. Straehler, of Straehler & Co., Inc.; Walter M. Stunzi, of Stunzi Sons Silk Co., Inc.; Daniel Ward, of Doherty & Wadsworth.

The election will take place at the annual meeting, which is scheduled for March 25, 1931.

Eleventh Week of Strike

Further reductions in number of militiamen on duty, followed by another demonstration at the mill gates of the Riverside and Dan River Cotton Mills, marked the arrival of the eleventh week of the Danville, Va., strike. Information obtained by a local newspaper indicated that more than 1,600 workers were on duty in the plants in which approximately 3,000 looms were being operated. The management began legal action to evict 47 families of "former employees" from company-owned houses, and the long-drawn-out battle for union recognition continues with no prospects for an early settlement.

S. C. Representative to Try to Limit Looms per Worker

SPARTANBURG, S. C.—Representative H. C. Godfrey of Spartanburg county states that he will introduce and press for passage a bill prohibiting textile plants of South Carolina for continuing the stetch-out system of working operatives. He was re-elected a member of the legislature last summer, and will introduce this bill when the body convenes in Columbia in January. His bill will carry provisions limiting the number of looms to a conservative degree for each worker.

North Star and Wamsutta Sales Change

North Star Woolen Mill Co., and Wamsutta Mills will combine their selling operations on North Star blankets and Wamsutta percale sheets and pillow cases Jan. 1, 1931, having headquarters at 180 Madison Ave., New York. Gray goods and other products of Wamsutta will continue to be sold at present offices at 40 Worth St., New York. North Star selling office at 42 East 32nd St., will be discontinued.

Glanzstoff Closes Charlotte Office

Sales operations of American Glanzstoff Corp., in North Carolina will in future be directed from the Burlington office, the Charlotte, N. C., office having been discontinued. The office will be in charge of A. L. Hill and J. E. Carrigan, Jr., and H. B. Summerell, who was in charge of the Charlotte office and has been transferred to Burlington.

Progress on Wool Exchange

The Wool Associates of the New York Cotton Exchange have announced that the preparation of the by-laws and rules is rapidly nearing completion and that plans have been made to set aside space on the trading floor of the New York Cotton Exchange for trading in wool top futures. A definite date for the inauguration of trading will be announced in the near future.

Protest Phila. Tax Rise

PHILADELPHIA—Increases in the 1931 tax assessments have brought strong protest from textile houses and it has been announced by C. Marlin Bell, of the Philadelphia Manufacturers Textile Association, that 25 textile concerns affected by the increase have formed a committee to fight for a modification.

Baker-Moise Co. Buys Morten-Davis Mills

The Baker-Moise Co., of Dallas, Tex., hosiery distributors, have purchased the Morten-Davis Hosiery Mills, located at 6001 Maple Ave., Dallas, and the mills have been incorporated under the name of the Baker-Moise Hosiery Mills, with a capitalization of $325,000.

Nonpareil Buys Reynolds Plant

EASTON, PA.—It was announced Wednesday that Nonpareil Silk Co., operating two silk mills in Easton, has purchased the former Reynolds Silk Mill in Phillipsburg, N. J., and will remove its two plants into the one large mill.

Business News

New G.E. Plastic Department

The various plastic activities of the General Electric Co. have been co-ordinated into one department known as the plastic department, it is announced by Gerard Swope, president. R. E. Coleman has been appointed manager with an advisory committee of vice-presidents J. G. Barry, chairman, W. R. Burrows, and C. E. Eveleth. The new department will be responsible for sales, engineering and manufacturing of plastics and involves activities at the Pittsfield, Schenectady, Fort Wayne, Erie and Lynn (River) plants.

Turbo-Mixer Appointments

Turbo-Mixer Corp., New York, N. Y., has appointed the National Supply Corp. of that city to represent it in England, Roumania and the Argentine for all products of its manufacture for the petroleum industry. Western Engineering Co., San Francisco, will represent Turbo-Mixer Corp. in the section of California north of the Tehachapi Mountains.

Ward-Love Pump and Permutit Co. Merge

Organization of General Water Treatment Corp., chartered under Delaware laws as a holding company, to merge the interests of the Permutit Co. and Ward-Love Pump Corp., is announced. Firms included in the merger, specialists in equipment for the softening and purification of water and allied chemical lines, have combined assets of more than $4,000,000. Permutit Co., a pioneer in zeolite water softening, is owner of a number of patents, and has plants located at Brooklyn and Birmingham, N. J. Ward-Love Pump Corp., manufacturer of quality products for 55 years, has two plants at Rockford, Ill., main offices being in Chicago.

T. B. Wood's Sons To Sell Texrope Drives in East

It is announced that an agreement has been entered into between Allis-Chalmers Mfg. Co., Milwaukee, Wis., originators of Texrope drives, and T. B. Wood's Sons Co., Chambersburg, Pa., whereby the latter company becomes licensed manufacturers and distributors of Texrope drives in Pennsylvania, New York, New Jersey, Delaware, Maryland, Ohio, West Virginia, Virginia and North Carolina.

Synthane Appoints Mid-West and N. E. Representative

Synthane Corp., Oaks, Pa., manufacturers of Synthane uniform laminated Bakelite, have recently appointed George F. Clifford, of Boston, as their New England representative, with offices at 2 Belton Street, Arlington, Mass. Donald A. Cox has been named Mid-West representative, with offices at the Miami Savings Building, Dayton, O.

American Cyanamid Names New Agents

The American Cyanamid Co., of New York, announces the appointment of the National Oil & Supply Co., of Newark, N. J., as distributors for northern New Jersey of Aero brand disodium phosphate, Aero brand trisodium phosphate and Aero brand aqua ammonia.

Litchfield Shuttle Resumes Operation

Litchfield Shuttle Co., Southbridge, Mass., which has been closed for a short time due to re-arrangement of financial affairs and slow business, resumed operations on a full time basis Dec. 1. Full operation is assured for some time.

Obituary

James Meckley Potts

James Meckley Potts, member of the firm and credit manager of E. Gerli & Co., Inc., silk importers, New York, died Monday in Flower Hospital, New York City. He was found unconscious in his New York apartment Sunday, suffering from a bullet wound. Mr. Potts was 38 years old. He joined E. Gerli & Co., Inc., in 1921, becoming a member of the company. He had been a director of Amalgamated Silk Corp., Phoenix Silk Mfg. Co., Allentown Silk Co., Georgetown Silk Co., and the National Raw Silk Exchange, and has acted on advisory committees of several branches of American Exchange Irving Trust Co. He was a founder and former president of the Silk and Rayon Credit Association, Inc. Mr. Potts is survived by his widow, Agatha Gerli, and three children.

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Brinton makes the Knitting Machine you want. Whatever type of merchandise you are making, or are thinking about making, consult one of our engineers and let him help you place the precise machines you need in your mill.

Brinton makes many types of Rib Knitting Machines and Open Top Jersey Knitting Machines in all diameters. Supplement your knowledge with that of Brinton engineers and the Brinton experimental department. These men are called in to solve the problems of mills in every part of the world. Their experience, knowledge and inventive genius is entirely at your disposal.

RIBBERS—of every type.
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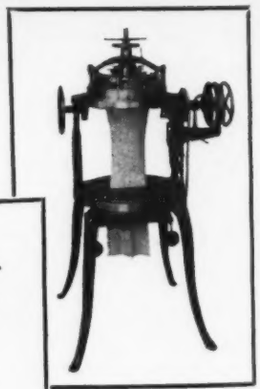
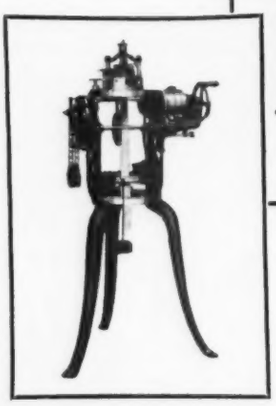


Plain Rib Body Machine



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CIRCULAR KNITTING MACHINES

of EVERY Kind for EVERY Purpose

New Officers for American Woolen Company

(Continued from page 33)

in the ability of Mr. Pendleton to carry the manufacturing forward on a sound basis.

Mr. Noah has been engaged in merchandising and department store work for over 18 years and was one of the founders of the Retail Merchants Association and the Associated Merchandising Association. He has been connected with Lord & Taylor, of New York, and J. L. Hudson Co., of Detroit, and has been with Gimbel Bros. for the last three years. Mr. Warner is noted for his studies of distribution in the wholesale and retail fields, has had previous experience in retail stores, and has been highly successful as an executive.

Mr. Pierce, the retiring president, was elected a vice-president and director of the American Woolen Co. in 1905. He was elevated to the presidency on the resignation of William M. Wood, in 1925.

No comment has been made upon the rumored reorganization of the financial structure of the company and it is presumed that any such action, if it takes place, will wait upon the new management.

Mr. Pierce's statement announcing the changes follows:

"Effective Feb. 2, 1931, William B. Warner becomes chairman of the executive committee; Lionel J. Noah president; Andrew G. Pierce chairman of the board, and Moses Pendleton, first vice-president, continuing as general manager.

"The executive committee, which will function actively, will thereafter consist of William B. Warner, chairman, Lionel J. Noah, Moses Pendleton and representatives of the company's bankers, viz.: Albert H. Wiggin, chairman of Chase National Bank of New York, Charles Hayden of Hayden, Stone & Co., and Ray Morris of Brown Bros. & Co.

"William B. Warner is president of the McCall Corporation, publishers of *McCall's* Magazine and other well known publications and designers, manufacturers and distributors of ladies' dress patterns. A forceful man, he has in that capacity and from previous business experience in the retail store field become an outstanding authority on the problems of national merchandising. He is thoroughly familiar with the methods of marketing both men's and women's wear. He has long concentrated upon the trends of wholesale and retail distribution in the United States and Europe. He brings to the company wide executive experience and a long record of conspicuously successful performance.

"The new president, Lionel J. Noah, who comes from an old family of fine Yankee ancestry, is at present executive vice-president of Gimbel Bros. of Philadelphia with which he has made an enviable record in the unbuilding of profits throughout an exceedingly trying and competitive period.

"The chief manufacturing responsibilities will continue to remain with Moses Pendleton, who though still a young and vigorous man, has been with the company in many capacities almost since its formation. Under his managership the important yarn department has never failed to make a profit. He has also directed with great skill the wool buying of the company and for a considerable period has been in general charge of manufacturing. Thus he is thoroughly familiar with the vital buying and manufacturing processes of the company.

"The present management had devoted itself to the concentration of manufacturing in the larger and more profitable units; to the reduction of inventories; and to the establishment of a thoroughly sound financial position. Looking ahead it has felt that the ultimate success of the company must come from an intensive application of the most modern selling methods. For that reason it has chosen for the president a man who has made a notable success in the merchandising field and who will give himself unreservedly to the development of a company normally handling in excess of $100,000,000 sales per annum.

"Directors feel that the introduction of the new and progressive merchandising elements will, with the continuity of management of manufacturing, ensure a scope and vigor of executive control that augur well for a return of prosperity as conditions in the industry improve. Now favored by the most liquid financial position in the history of the company the new executives will be free to deal solely with manufacturing and selling problems."

Army To Buy Textile Items

Bids will be received by the Depot Quartermaster, U. S. Army, Philadelphia, Dec. 19, to supply them with 92,700 yd., silesia, cotton uniform lining cloth, dyed khaki, 36 in. wide, to conform with specifications 6-18-A. On Dec. 18 the same depot will receive proposals to furnish them with 10,300 gross yards 11/16 in. sateen mercerized binding, khaki color and 2,575 yd., 1 1/16 in. binding of same material.

Bids will be opened Dec. 18 on 2,361 gross yards ⅜ in. cotton tape, bleached; 1,693 gross yd., ½ in. bleached and 755 gross yd., ½ in khaki vat-dyed tape, conforming with specifications 6-98 A. Dec. 17 the depot will receive bids on 7,389 cones cotton mercerized thread, 6,000 yd. cones; 9,474 spools, with 600 yds., on each spool; 453 spools No. 20 4/cord, 600 yd., to a spool and 2,100 spools, gimp cotton No. 8-2 oz. spools.

Bids will be opened Dec. 17 to supply the depot with 755 gross yd., cotton laces for breeches, khaki color, vat dyed 54 in., in length, to have a tensile strength of 42 lb., and to have a brass tip.

New Winding Equipment at Clemson College

New winding equipment has been installed in the Clemson College (S. C.) Textile School, as follows: one Foster No. 101, gear head 10-spindle machine, each side having separate motor drive; one Foster No. 75, 6-spindle precise winder; and one Universal No. 50 winder equipped to handle either rayon or cotton from skein to cone. It is also planned to add one of the latest Universal No. 40 winders, such as that exhibited at recent textile shows, according to a statement from H. H. Willis, director of the school.

Japanese Cocoon Crop Up 11%

An increase in quantity of about 11% over the record 1929 crop is shown for the spring 1930 Japanese cocoon crop amounting to 463,645,105 lb., valued at $105,144,295, according to figures released by the Japanese Ministry of Agriculture and Forestry and received in the Commerce Department. Owing to lower prices, however, the value represents a decrease of 41% from the corresponding crop of last year. The constituency of the 1930 cocoon production was as follows: Whites 244,091,541 pounds, valued at $54,541,616, and yellows 219,553,364 pounds, valued at $50,602,678.

Domestic Dye Consumption and Production Census

The 1929 output of coal-tar dyes in the United States represented a 15% increase over the 1928 figure, along with a 16% advance in domestic consumption over the same period, according to the "Census of Dyes and of Other Synthetic Organic Chemicals, 1929," recently released by the United States Tariff Commission. The comparative figures follow: Production, 1928—96,625,451 lb. 1929—111,421,505 lb.; apparent consumption, 1928—70,830,395 lb. 1929—78,377,709 lb.

Navy To Buy Textile Fabrics

Bureau of Supplies, and Accounts, Navy Department, Washington, D. C., will open bids Dec. 19 to supply them with cotton bandages in the following amounts: 6,000 5 yd., long, 2 in. wide; 4,800 2½ in., wide and 4,800 3 in., wide and 10,000 yd., flannel, not less than 26 and not more than 27 in. wide. On Jan. 6 the same department will receive proposals to supply them with 244 bedspreads, cotton, dimity, bleached, 56 x 90 in., and 1,000 blankets, woolen, type C, 66 x 84 in.

Thrown-Silk Yardage Test for Clearance Calculations

With a view to dispelling the confusion which exists regarding the relative merits of the sizing test and yardage test for thrown silk, the United States Testing Co., Inc., 316 Hudson St., New York, has issued the following bulletin:

"Your attention is called to the difference between the sizing test and the yardage test on thrown silk. The sizing test on thrown silk is a measure of variation in size. Calculating the yards per pound from the sizing test is often unreliable as it is wholly dependent upon the variation found in 20 test skeins. It is suggested that this test be used as a size test only. The yardage test on thrown silk shows more accurately the yards per pound. The large quantity of yarn measured on the special equipment in performing this test is more representative of the lot and tends to eliminate the variations which can occur if yardage is based on the sizing test. There is no waste, as the entire sample used in making yardage test is returned."